

Topical
analgesia
for the
**INFLAMED
THROAT**

In chewing Aspergum, the patient releases a
thing flow of saliva laden with acetylsalicylic acid—bringing the
analgesic into prolonged contact with pharyngeal
areas which often are not reached, even intermittently, by
gargling or irrigations.

The stimulation of muscular activity aids in the elimination
of local spasticity and stiffness, increasing
patient comfort, permitting an earlier ingestion of nourishing
food, hastening convalescence.

INDICATIONS: Post tonsillectomy care; acute and chronic
sillitis, pharyngitis, "scratchy throat" of influenza, "grippe," etc.

Ethically promoted—never advertised to the laity.

Dillard's **Aspergum**

*is most palatable ...
readily accepted
by all ...
including children.*

In packages of 16;
moisture-proof bottles
of 36 and 250 tablets.

PHARMACEUTICAL

White

LABORATORIES OF
CANADA, LTD.

MANUFACTURERS

Manitoba Medical Association

Canadian Medical Association, Manitoba Division

Executive Officers

President	First Vice-President	Second Vice-President
P. H. McNULTY	J. R. MARTIN	C. H. A. WALTON
Secretary		Treasurer
D. L. SCOTT		A. M. GOODWIN

Past Presidents

STUART SCHULTZ D. C. AIKENHEAD

★ ★ ★

Members of the Executive

Representatives of College of Physicians and Surgeons of Manitoba

H. O. McDIARMID, Brandon W. G. CAMPBELL, Winnipeg

Members Elected at Large

A. F. MENZIES, Morden H. F. CAMERON, Winnipeg
A. HOLLENBERG, Winnipeg ELINOR F. E. BLACK, Winnipeg
J. MURRAY MATHESON, Brandon E. K. CUNNINGHAM, Carman

Advisor to Executive: F. D. McKENTY, Winnipeg

Representatives of District Medical Societies

Southern	Northern District
JOHN C. ELIAS, Elm Creek	R. E. DICKS, Dauphin
Brandon and District	Central District
H. S. EVANS, Brandon	G. H. HAMLIN, Portage la Prairie
North-Western	Winnipeg Medical Society
E. D. HUDSON, Hamiota	R. W. RICHARDSON, Winnipeg

North of 53

N. G. TRIMBLE, The Pas

Representatives

Manitoba Health Officers' Association	Municipal Doctors' Association
A. W. HOGG	E. J. RUTLEDGE, Erickson

Faculty of Medicine, University of Manitoba

J. D. ADAMSON, Winnipeg

★ ★ ★

Manitoba Medical Review

Published on the First of Each Month by the Manitoba Medical Association
Editorial and Business Offices: 510 Medical Arts Building, Winnipeg

Editor

J. C. HOSSACK, M.D., C.M. (Man.)

Editorial Committee

S. S. PEIKOFF, M.D., F.R.C.S. (Ed.)
W. R. GRANT, M.D.

Business Manager

J. GORDON WHITLEY

Advertising Rates on Request

Annual Subscription, \$3.00, Except in the North
West Territories.

*Editorial or other opinion expressed in this Review is
not necessarily sanctioned by the Manitoba Medical
Association.*

Copyright: Under the Copyright Act of 1921

A Physiologic Approach to the Blood Dyscrasias and Their Diagnosis

By Maxwell M. Wintrobe, M.D., Ph.D., Professor of Medicine, University of Utah

In approaching the study of a patient from the standpoint of the blood and in attempting to interpret the findings in such an individual it is important to visualize the hemopoietic system as a physiologic unit. This physiologic unit consists of three parts; namely,

(1) the erythron. This includes the circulating red corpuscles and the organ (bone marrow) from which they arise;

(2) the leucocytes, including the tissues where they are produced; and

(3) the platelets and the tissues where the platelets are formed, together with the various factors concerned in coagulation.

We are inclined to accept equilibria as matters of course and to fail to appreciate the efficiency with which the blood elements are maintained in a fine state of balance. It is remarkable, nevertheless, that the formation and destruction of the three corpuscular elements of the blood are so nicely balanced that the normal blood picture is quite constant. A hematologic investigation requires an evaluation of this state of balance.

In selecting technical procedures for the study of a patient it is important to use those which are most simple and most accurate for the purpose in mind. There is little to be gained by a "complete blood examination" in certain cases, whereas the simple ordering of a red cell count and hemoglobin is often equally ineffective in the search for the diagnosis and in the attempt to understand the nature of the patient's illness. A clear understanding of the physiology of the hemopoietic system makes possible selection of those procedures most likely to reveal information of value, thus conserving technical effort.

In regard to the erythron it is necessary to know:

- (a) What is the state of blood formation? Is it active and adequate?
- (b) Is blood destruction in excess of normal?
- (c) Is blood being lost?
- (d) Adequacy of red cell formation is indicated, of course, by lack of anemia. The degree of activity of the erythropoietic tissues is indicated by (1) certain morphologic changes in the blood; and (2) an increased proportion of nucleated red cells in the bone marrow.

The morphologic changes in the blood indicative of increased activity of the erythropoietic

tissues include, in particular, an increased number of reticulocytes and the presence of polychromatic red corpuscles as well as macrocytes. Nucleated red cells in the blood also suggest increased activity but not infrequently these as well as stippled cells and other abnormal forms (Howell-Jolly bodies, Cabot's rings) are indicative of **disturbed** red cell formation rather than of specifically increased activity. The presence of a greater percentage of nucleated red cells in the bone marrow than is normal is an indication that hyperplasia of the erythropoietic tissue has taken place.

It is important to bear in mind that increased activity of the erythropoietic tissue is reflected also in the other corpuscular elements in the blood. Thus, when red cell formation is greatly stimulated, as following a hemorrhage or in association with increased blood destruction, leucocytosis occurs and young forms of the myeloid series of leucocytes may be found in the blood. This manifestation may be so marked as to produce a leucocytic picture somewhat suggestive of that seen in leukemia ("leukemoid reaction"). There also occurs in association with increased erythropoietic activity an increase in the number of blood platelets. The rise in the number of these corpuscles in the blood following acute blood loss is well known. Morphologic changes in the platelets may also be observed. For example, large and bizarre forms of platelets are not infrequently encountered in instances of acute blood destruction or acute blood loss.

In relation to red cell formation the question must also be asked, Are the factors necessary for blood formation being supplied in adequate amounts? The answer to this question is gained in part by determining the morphologic type of anemia which is present. Macrocytic anemia is due in most instances to lack of the anti-anemic principle contained in liver, whereas hypochromic microcytic anemia is almost always due to iron deficiency. The classification of anemia on morphological grounds will be discussed shortly.

(b) Excessive blood destruction is indicated by

(1) bilirubinemia, and even hemoglobinemia. These changes can be discovered by examining the blood plasma where free hemoglobin and, more often, bilirubin as indicated by an indirect

Van den Bergh reaction and an increased icterus index, are indicative of a degree of blood destruction in excess of the normal.

(2) Blood destruction is also indicated by an increase in the quantity of urobilinogen pigments in the stools and urine. Unfortunately, quantitative procedures for the measurement of urobilinogen are as yet not so simple or practical that they can be employed in the average laboratory. However, the urine dilution method for urobilinogen can be used effectively in a semiquantitative way.

(3) Blood destruction, particularly if it is acute, is reflected in stimulated erythropoiesis. The percentage of reticulocytes is increased and polychromatic red corpuscles, macrocytes and nucleated red cells are to be found in the blood as well. At the same time, the leucopoietic tissue is stimulated with leucocytosis and a "shift to the left" resulting. Even an increase in the quantity of platelets may occur. This is to be seen in cases of acute blood destruction associated, for example, with sensitivity to sulfanilamide but is found also in such forms of chronic hemolytic anemia as sickle cell anemia. It is important to bear in mind, however, that in certain instances of chronic hemolytic anemia the changes in leucocytes and platelets described above are not found. There may be, in such cases, leukopenia and granulocytopenia and the total number of platelets may be significantly reduced.

To some persons the study of a case of hemolytic anemia means that the test for erythrocyte fragility in hypotonic solutions of saline must necessarily be done. Comparatively few people realize that this test is of very limited value. It is, of course, very useful in aiding the recognition of cases of congenital or familial hemolytic icterus but the test has relatively little value in other forms of hemolytic anemia. It is true that it has been found that some degree of increased red cell fragility is present in certain cases of acquired hemolytic anemia but this is usually not pronounced and is comparatively infrequent. In other types of hemolytic anemia certain other tests for red cell fragility are of value. Thus, for example, the acid fragility test is useful in cases of paroxysmal nocturnal hemoglobinuria and tests for saponin and lecithin fragility have been used in other types of hemolytic anemia.

(c) With regard to the third question, namely, Is blood being lost?, the answer is obtained in several ways:

The type of anemia may be a useful index. Thus if blood loss is acute the anemia will be normocytic or, if there is great stimulation of the erythropoietic tissue, the anemia may be tem-

porarily, moderately macrocytic. On the other hand, if blood loss has been occurring for a long time with the result that iron deficiency has developed the anemia is hypochromic and microcytic in type.

Blood loss, like acute blood destruction associated with signs of bone marrow stimulation. Thus leucocytosis and an increase in the number of platelets are associated with acute blood loss and reticulocytes are found in increased numbers. Peculiarly, however, chronic blood loss may be associated with a peripheral blood picture which shows little evidence of marrow stimulation. Thus in chronic hypochromic anemia there is leukopenia, relative lymphocytosis and sometimes moderate thrombocytopenia. The reticulocytes are normal in number as a rule, nucleated red cells are rare, and polychromatophilia is not frequent.

When blood loss has been acute there is rarely any problem in recognizing the nature and extent of the anemia. When blood loss is occult and prolonged the resulting clinical and hematological picture may be such as to raise some questions as to the nature of the patient's illness. As already mentioned, the presence of hypochromic microcytic anemia serves as a valuable clue since this type of anemia indicates iron deficiency. If confronted with such anemia one should search thoroughly for occult blood loss. In the male, the gastro-intestinal tract is the usual site and it is not very uncommon to discover a chronic gastrointestinal bleeding ulcer in such cases. It must be kept in mind that such an ulcer may be symptomless except for its effect in producing anemia. Hookworm infestation will have the same effect. In the female the genital tract is the chief source of blood loss.

The **morphological classification of anemia** is in the evaluation of the status of the erythrocytes. Such a classification depends on the calculation of the average size and hemoglobin content of the red corpuscles. The principle of these measurements is very simple. They depend on accurate determination of the red cell count, the hemoglobin, and the volume of packed red cells as measured in the hematocrit. When one knows the number of cells in a certain unit of volume, the quantity of hemoglobin and the space occupied by the red corpuscles, it follows logically by dividing the various figures into one another that one can calculate the average size and hemoglobin content of the red corpuscles. Thus, the **corpuscular volume** is calculated by dividing the volume of packed red cells, expressed in cubic centimeters, by the total volume of blood, expressed in thousands cc. of blood, by the red cell count, expressed in millions per cubic millimeter. A particular formula is used in order that the result can be expressed in cubic microns.

$$M C V = \frac{\text{Volume packed red cells, cc. per 1000 cc. blood}}{\text{R.B.C. (millions per c.mm.)}} = \text{cubic microns}$$

The mean corpuscular volume in the average normal is 87 cubic microns and ranges from 82 to 92 cubic microns.

Likewise, the **mean corpuscular hemoglobin** is determined by dividing the quantity of hemoglobin, expressed in grams per thousand cc. of blood, by the red cell count. The answer is given in micromicrograms (a millionth of a millionth of a gram).

$$M C H = \frac{\text{Hemoglobin (gm. per 1000 cc. blood)}}{\text{R.B.C. (millions per c.mm.)}} = \text{micromicrograms}$$

In the average normal person this value is 29 micromicrograms and ranges from 27 to 31.

Again, if we know the quantity of hemoglobin in a unit of volume and if the space occupied by the red corpuscles is known, it is possible to calculate what the concentration of hemoglobin in the red corpuscles is. For this purpose one visualizes the red cells as containing hemoglobin in solution. While the chemical state of hemoglobin in the red cell is probably not one of "solution" the concept is a useful one for clinical purposes. Thus, the **mean corpuscular hemoglobin concentration** is measured by dividing the hemoglobin, expressed in grams per hundred cc., by the volume of packed red cells, expressed in cubic centimeters per hundred cubic centimeters.

$$M C H C = \frac{\text{hemoglobin (grams per 100 cc.)}}{\text{volume of packed red cells (cc. per 100 cc.)}} \times 100 = \text{per cent}$$

Normally the M C H C is 34 per cent. and ranges between 32 and 36 per cent.

While it is apparent to most persons it still needs emphasis that the value of these calculations depends, in the first place, on the accuracy of the red cell count, hemoglobin and volume of packed red cells on which these calculations are based. It is amazing how many persons perform or draw conclusions from red cell counts who are not aware of the difficulty in making accurate red cell counts and the errors to which this procedure is subject. Many persons, furthermore, are rather careless in measuring hemoglobin. This is not a technically difficult procedure like the red cell count but standardization of hemoglobinometers has, on the whole, been inaccurate. It is for these reasons that the writer places more reliance on the volume of packed red cells as measured by the hematocrit if he wishes to know simply what is the degree of anemia or polycythemia present. Since a larger volume of blood

is measured than in the red cell count or hemoglobin determination and since the whole procedure is macroscopic and easily controlled as to its accuracy, it is possible to measure the volume of packed red cells with much greater precision than the red cell count or hemoglobin. In order to classify the anemias on a morphological basis, however, it is necessary that not only the volume of packed red cells but also the hemoglobin and

red cell count be determined and this must be done with the greatest possible care.

When anemias are classified according to these corpuscular measurements it is found that they fall rather readily into four groups. These are now well known and need not be discussed in any detail. The **macrocytic anemias**, which may be defined as those instances of anemia in which the mean corpuscular volume is significantly greater than 92 cubic microns, are found when there is a lack of the antianemic principle of liver whether that be in association with pernicious anemia, sprue or any of the other anemias in which such a deficiency occurs. It is important to bear in mind, however, that macrocytosis may occur also whenever there is very active red cell

regeneration and, consequently, macrocytic anemia will be found temporarily under conditions in which normocytic anemia more often develops. This distinction is important, for in this second group of macrocytic anemias liver therapy is of no value.

In the macrocytic anemias the average increase in the size of the red cells is generally accompanied by an average increase in their hemoglobin content. Consequently, the mean corpuscular hemoglobin concentration remains constant and within the normal range. Such anemias are not "hyperchromic."

Normocytic anemia, that is anemia in which the average volume and hemoglobin content of the red cells are not altered from the normal, may occur when there is acute blood loss, blood destruction, lack of blood formation or an increase in the total plasma volume with a relative reduction in the quantity of red cells. As already mentioned, if marrow stimulation is pronounced

so that the younger and larger forms of the red corpuscles appear in the circulation in significant amounts, macrocytosis may develop temporarily.

Simple microcytic anemia refers to those instances of anemia in which there is a moderate reduction in the size of the red corpuscles (that is, below 82 cubic microns) without a significant alteration in the concentration of hemoglobin in these cells. This is a rather ill-defined group of anemias which is found in association with impaired blood formation, such as in various cases of anemia associated with infection and renal disease. This type of anemia is also encountered in familial hemolytic jaundice.

Hypochromic microcytic anemia refers to an anemia in which the size of the red cells is reduced below normal and the concentration of hemoglobin in the red cells is even more markedly lowered. It is most important to recognize this type of anemia for, with certain rare exceptions, it represents a lack of iron and can be effectively relieved by iron therapy. The exceptions are (1) Mediterranean anemia or thalassemia and (2) pyridoxine deficiency anemia. The latter is seen in certain animal species but has never been encountered in man.

The importance of technical accuracy has been mentioned. This can and should be checked by careful examination of the blood smear. Every physician should acquire the habit of studying the blood smear of his patient himself, whether or not he has the time or the skill to carry out the other necessary laboratory examinations. The inspection of the smear will, to the experienced eye, confirm the quantitative data described above or may lead to the discovery of technical errors.

Along with the examination of the status of the erythron it is important that the leucocytes and platelets receive attention as well. The leucocyte count and the differential examination will indicate whether or not there has been an increase in the myeloid series of leucocytes; that is, an increase in the cells formed in the bone marrow. As already indicated several times, increased hemopoietic activity is reflected in an increase in the number and immaturity of the myeloid series of cells. As has also been stated already, in certain instances of chronic anemia of long standing this does not occur. Thus, in pernicious anemia and in chronic hypochromic anemia, one sees leukopenia and relative lymphocytosis. At the same time multisegmented polymorphonuclear leucocytes are found in the circulating blood. In such cases an absolute decrease in the number of myeloid leucocytes is found and this occasionally may be of such a degree as to raise the question of marrow aplasia. Examination of the bone marrow in such cases reveals the true state of affairs. In a similar manner an increase in

the number of platelets reflects increased bone marrow activity but the number of these corpuscles may be decreased in certain chronic anemias in spite of marrow hyperplasia.

With reference to the platelet count the system of checks and balances must be referred to again. The counting of platelets is a difficult technical procedure which is open to many errors. Fortunately when the platelet count is greatly reduced one usually finds that the bleeding time is prolonged and clot retraction is poor. At the same time the resistance of the capillaries to pressure is reduced so that the tourniquet test is positive. If bleeding time and clot retraction are prolonged and the tourniquet test is positive and if the inspection of the blood smear reveals few platelets one has much more faith in a platelet count which falls below the normal values than when these other findings are normal. The coagulation time in such cases frequently is normal. Measurement of coagulation time and of prothrombin time have an important place in the study of special instances of abnormal bleeding but the procedures cannot be discussed here.

A useful method of blood examination which permits one to follow the principles outlined above consists in the collection of 5 cubic centimeters of blood in a suitable anti-coagulant mixture, together with a few blood smears. From the clinical history and findings in the patient to indicate it, the bleeding time, coagulation time and clot retraction can be measured as well.

A suitable anti-coagulant consists of a mixture of ammonium and potassium oxalate. When 6 gm. of the former and 4 mg. of the latter are mixed with 5 cc. of blood the red cells are not altered significantly in their size or hemoglobin content. This quantity of anticoagulant mixture is more readily prepared by placing in a small bottle suitable for collecting blood, 0.5 cc. of an aqueous solution containing 1.2 gm. ammonium oxalate and 0.8 gm. potassium oxalate in 100 cc. The oxalate is allowed to dry. Not only can red cell counts, hemoglobin and volume of packed red cells be determined on blood so collected but the leucocyte count, reticulocyte count, and platelet count, sedimentation rate, icterus index, red cell fragility and prothrombin time can be measured as well. The method is of value because with 5 cc. of blood collected in this way, together with a few blood smears, it is possible to carry out most of the determinations which one would require in the study of a patient with anemia or other blood dyscrasia without having further access to the patient. The procedure also permits one to check various determinations if, for any reason, it seems desirable to do so. It is the custom once blood has been so obtained to determine a hematocrit and determine the sedimentation

rate, the volume of packed red cells, the volume of packed white cells and platelets, and finally the icterus index. These serial steps entail the filling of only one instrument and yet they yield information of great value and accuracy. If the volume of packed red cells is less than or greater than normal a hemoglobin determination and red cell count are done. If the volume of packed white cells or platelets is abnormal, leucocyte or platelet counts are done. An increase in the icterus index may sometimes be encountered which has not been detected clinically. The use of the hematocrit in this way serves to "screen" patients, so to speak, and to present clues for the further study of the patient.

It is not good practice to make blood smears from blood collected in an anti-coagulant. In particular, changes in the leucocytes take place which may sometimes make it impossible to identify them. It is our practice always to make smears directly from the finger.

It is not within the scope of this discussion to consider the value of bone marrow examinations or to discuss the measurement of total blood volume. When the examination of the blood is approached from the standpoint outlined here it

is not often that one needs to examine the bone marrow. The adequate examination of the circulating blood and its proper interpretation gives a remarkably accurate picture of the changes which have occurred in the marrow. Sternal puncture is particularly valuable, however, in such conditions as aleukemic leukemia, multiple myeloma, Gaucher's disease, kala azar, and in certain types of anemia, particularly if the diagnosis still remains in doubt after the blood has been adequately examined. The total blood volume needs to be measured comparatively rarely in clinical practice. As yet, furthermore, this can be done with reasonable accuracy only by persons who have gained considerable experience with the procedure.

Summary

The importance from a diagnostic standpoint of regarding the hematopoietic system as a physiologic unit is discussed and the methods whereby the status of the erythron is evaluated are described.

Reference

Wintrobe, M. M. *Clinical Hematology*, Lea & Febiger, Philadelphia, 1942.

Amoebiasis*

C. B. Schoemperlen, M.D.

Officer I/C Division of Medicine, No. 5 Canadian General Hospital Overseas

This subject is chosen not because it is a new disease, but because it has only recently appeared, to any extent, in this country. Before the present war the disease was extremely rare in Manitoba, and therefore few physicians or surgeons were acquainted with it except in the literature. However, with the cessation of hostilities many individuals are returning with the infection, and as most of them are being discharged from the Services they become the responsibility of the civilian doctor. It is therefore essential that everyone in this province be aware of its existence and acquainted with the clinical manifestations and treatment of the disease. It may well be pointed out that amoebiasis is no respecter of persons as several medical officers here can testify.

Proof of the existence of Amoebiasis in returned personnel is exemplified in a recent survey by Dr. T. H. Williams, Pathologist at Deer Lodge Hospital. The stools of 500 men who had returned from either the Central Mediterranean, India or Ceylon were examined. Sixty-five of these individuals were infected with *Entamoeba Histolytica*,

an incidence of 13%. In comparison to this high incidence in returned personnel, only two out of 100 men who presented for enlistment at the same time were infected. One of these had just returned from the Southern States, the other was unavailable for further questioning. This small series emphasizes the fact that the disease is almost non-existent in local inhabitants who have not been out of the country; but that it may frequently be encountered in those who have been away. Thus it must be remembered in the differential diagnosis of obscure maladies and pyrexias.

The term Amoebiasis is preferred to its synonym, Amoebic Dysentery, because many of these patients do not give a history of dysentery or at least have no dysentery when they first consult a doctor.

Not only are these infected individuals a source of danger to themselves, but they may also infect other members of the community and therefore the disease must also be considered from a public health standpoint.

Definition

Amoebiasis denotes infection with Protozoal organisms known as Amoebae. Though numerous species are known to man, one only—*Entamoeba Histolytica*, is strictly pathogenic.

* Read at a meeting of the Winnipeg Medical Society, November 16, 1945, by C. B. Schoemperlen, M.D., formerly Lieut.-Colonel, Officer I/C Division of Medicine, No. 5 Canadian General Hospital Overseas.

Amoebae were first seen and described by Losch in 1875. Schaudinn in 1903 was apparently the first to describe two separate species found in man, namely: *E. H.*, which is pathogenic, and *E. Coli*, which is not. These two can only be distinguished microscopically.

The infection may affect more than one organ of the body, but the primary and most important is the large intestine. When metastatic lesions develop in the liver it is known as "secondary amoebiasis" or "Hepatic Amoebiasis."

Etiology and Epidemiology

To all intents and purposes man is the solitary reservoir of infection although rarely a morphologically similar amoeba has been recovered from the dog, cat, rat and pig.

E. H. exists in three stages:

- (1) Vegetative stage or Trophozoite.
- (2) Precystic stage.
- (3) Cystic stage.

The first and last of these stages only need concern us. The vegetative form is actively Motile; 20-30 Micra in diameter. It obtains its nourishment from the living cells and tissues of the intestinal wall, is invasive and responsible for the pathologic changes. These "amoebae" are very delicate and short-lived outside the body and when ingested by man are rapidly destroyed in the stomach and duodenum. During an acute attack of Amoebic Diarrhoea these amoebae are discharged in the feces and they are of little, if any, importance in the epidemiology of the disease. Multiplication of these amoebae takes place in the submucosa of the large bowel by binary fission; however some of them become progressively smaller, round up, secrete a resistant capsule to form the "cyst" which is 5-20U in diameter. For purposes of clarification during this paper, these stages will be referred to as "amoebae" and "cysts" respectively.

The sole purpose of the cyst is transmission of the parasite from one host to another; it is only in this state that the parasite can survive outside the human body and only by cysts that the infection can be spread. They are passed in the feces and may then be transmitted by pollution of water, or of soil where human excreta is used as fertilizer, thus contaminating fruit or vegetables grown on this soil. Flies may also transmit the infection. They feed upon or breed in excreta, the cysts survive in their intestines, and in the course of subsequent feedings they evacuate their gut and thus contaminate food. Infected food-handlers by uncleanness may also transmit the infection.

The cysts are rapidly destroyed by drying and dessication, but may live several weeks in clear water or up to three months at freezing temper-

atures.⁴ Colonel Stone, of the Medical Corps, U.S.A., states that cysts from cultures were viable up to 14 months in the ice box at 32° F.³

They are not destroyed by the concentration of chlorine customarily employed in water purification.

Cresol is probably the most effective disinfectant for stools, a 1 in 250 watery solution kills most of the cysts in five to ten minutes.

Cysts then are ingested by the human host, pass unaffected through the stomach into the small bowel, here dissolution of the cyst capsule takes place and by a complicated series of nuclear and cytoplasmic divisions eight amoebae hatch from one cyst. These liberated amoebae then pass with the intestinal contents into the large bowel where they establish themselves. Cysts are not found in the tissues of the host and it is a curious and speculative fact that cysts are not formed from the active tissue-invasive amoebae in a liver abscess.

Incidence and Distribution

Age—The infection may be acquired at any age but is uncommon in children, common between 20 and 40 years, thereafter showing a rapid decline.

Sex—More common in males.

Race—All races appear to be liable to infection. The average incidence in the United States is stated to be 9.8% in Manual of Tropical Medicine and 10% by C. F. Craig; and in some regions in the tropics and subtropics may be as high as 50% or more. The incidence in any population is governed by the standard of sanitation; however, in spite of this, amoebiasis is more prevalent in tropical and subtropical countries than in the temperate and colder regions of the world. In the latter it is more prevalent in the warm months of the year.

Canadians most likely exposed to the infection then would be those who served in the Pacific and Mediterranean theatres. It must also be emphasized that Amoebiasis is present, though to a lesser degree, in North West Europe and we have already seen several patients who acquired their infection in that theatre. Theoretically at least then, the infection may occur in any Canadian who served overseas, and this fact must be remembered in the differential diagnosis of obscure or indefinite maladies occurring in these individuals. Although it is probable that a greater proportion of men from Hong Kong are infected, a much larger force of Canadians was employed in Sicilian and Italian campaigns; and the actual number from there who are infected will likely be greater. An attempt is being made to examine stools of all men from Hong Kong and the infected are being treated; thus they will

present as many problems from a public health and diagnostic point of view.

Pathology

As stated, amoebic dysentery is a disease of the large intestine, although occasionally in very acute cases the terminal portion of the small bowel may be affected. The fundamental pathology is characterized by penetration of the tissues by E.H., necrosis of tissue cells, both by their own activity and by means of a powerful cytolytic ferment, and by the absence of inflammatory reaction. The mucosa is first attacked with production of minute ulcers, the parasites then pass down the crypts of Lieberkuhn to the submucosa, where the amoebae multiply and the lesion spreads in the submucosa. When sufficient pus collects it bursts into the lumen of the bowel, producing an ulcer with a narrow neck, broad base, and undermined edge. The mucosa between ulcers is relatively normal unless there are secondary bacterial invaders or a co-existent or superimposed bacillary dysentery. The amoebae are apt to invade the walls of thrombosed vessels and may be recognized in the coagulum and it is no doubt by this means that they gain access to the portal circulation and eventually reach the liver to produce an amoebic hepatitis or abscess. Such abscesses may be single or multiple.

Amoebic abscess of the lung, brain and other organs occurs only rarely.

In some instances extensive invasion of the bowel may produce perforation or hemorrhage, in others granulomatous fungating masses are produced in the bowel.

At post-mortem the cadaver shows no signs of toxic absorption. The lesions most often affect the caecum, ascending colon, sigmoid and rectum, and the appendix is affected in a large number of cases.

Clinical Characteristics

The incubation period is estimated to be a considerable length of time, even up to years. In the Chicago epidemic of 1933 it varied between even days and four months.

The infection may simulate any disease of the gastro-intestinal tract. Although it may be acute and rapidly fatal, on the whole the parasite endeavours to subsist on the best terms with the host so that manifestations of the infection are moderately mild and the host remains relatively healthy and active although suffering from recurrent and chronic diarrhoea. These then, are cases of "walking diarrhoea" in contradistinction to those with bacillary dysentery who are usually bed-ridden.

It is probable that infection by the parasite may persist for life, unless treated, with periodic exacerbations of intestinal symptoms and by

remissions during which the patient may be symptom-free.

Clinical Types

(1) **The Cyst-Passer** is the commonest clinical type. There may be the convalescent passer who has apparently recovered from his initial infection but continues to pass cysts in the stools and the "healthy passer" who has never had any clinical symptoms of the infection. In these individuals there is the ever-present liability to a clinical "flare-up" or to hepatic amoebiasis and they constitute a potential source of danger to others.

The Cyst-passer may feel perfectly well, or he may have vague complaints such as fatigability, lassitude, vague abdominal discomfort or flatulence.

(2) **Amoebic Diarrhoea.** Here the diarrhoea is mild, about four stools a day, and may alternate with constipation. The patient may have abdominal "discomfort" but does not complain of actual pain. There is little change in the white cell count, the stool is semi-liquid, fecal, usually offensive, and may contain flecks of bloody mucous. If there is much altered blood, the stool resembles "anchovy sauce." The patient, though inconvenienced, carries on his work, and he may eventually show signs of neurasthenia and secondary anaemia.

(3) **Acute Amoebic Dysentery.** This is not common; it may occur, though, as the initial manifestation of the infection or in previously healthy "cyst-passers."

The onset is acute with fever, chills, nausea, severe abdominal cramps and tenesmus, 15-20 stools a day, liquid, containing pin-head flecks of bloody mucous, the so-called "sago grain stools" or there may be gross blood. There is usually a leucocytosis. There may be extensive ulceration of the mucosa of the colon with gangrene of the bowel or perforation with peritonitis or haemorrhage, or the patient may die from cardiac failure and exhaustion.

(4) **Chronic Amoebic Dysentery.** This may be the result of repeated attacks of inadequately treated amoebic diarrhoea or acute amoebic dysentery, with superimposed bacterial infection. The patient has recurrent attacks of fever and dysentery with blood and pus in the stools, resembling ulcerative colitis, and in the intervals the stool is loose. The attacks usually last 7-10 days and the patient eventually shows signs of anaemia and cachexia.

(5) **Amoebic Typhlitis.** In certain individuals the infection localizes in the caecum and ascending colon and the clinical picture may be that of an acute or chronic typhlitis. This may be a surgical trap as operation will likely result in

break-down of the suture-line with generalized fatal peritonitis.

(6) **Amoebic Appendicitis.** Likewise the appendix may be the site of invasion of the amoebae and with secondary bacterial infection superimposed the clinical picture of subacute appendicitis may be encountered. If E.H. are demonstrated in the stools of these patients they should be given anti-amoebic therapy before operation.

(7) **Amoebic Granuloma.** Rarely when the infection is accompanied by the formation of a granulomatous lesion carcinoma may be misdiagnosed. This type of lesion may occur any place from caecum to rectum, and may produce partial or complete obstruction of the colon.

Fecal fistula, fistula in ano and localized peritoneal abscesses may rarely be encountered.

(8) **Amoebic Hepatitis.** This may occur any time in the course of the amoebic infection in about 5% of cases. It not uncommonly occurs without previous history of amoebic infection and without demonstrable signs in the colon. The amoebae are metastatic from the large bowel to the liver via the portal circulation.

The onset is usually abrupt with rigor, upper abdominal pain which may be referred to the shoulder. The patient is acutely ill with fever to 104°, leucocytosis to 20 or 30,000 and the liver is large and tender. In the absence of amoebae in the stools the dramatic response to Emetine is diagnostic. Liver biopsy should not be done as fatal hemorrhage will probably ensue.

Occasionally cases of chronic amoebic hepatitis will be met. They present problems in the differential diagnosis of a P.U.O. The history will usually, although not always, give a clue. Here the complement fixation test may be of value. Jaundice is rare in amoebic hepatitis.

(9) **Amoebic Hepatic Abscess.** This is usually a late complication; the patient as a rule presents with a large solitary abscess although it is believed that at the beginning there are multiple hepatic abscesses which coalesce to form a solitary necrotic mass. The abscess is almost always in the anterior upper pole of the right lobe, although it may occur in any portion of the liver. The clinical picture is very similar to that of amoebic hepatitis, but the abscess may be bulging through the chest wall, or upper abdomen. Extension or rupture into the right pleural cavity or lung may occur. The response to Emetine though partial is not as dramatic and clinical signs, together with some leucocytosis will likely persist. There are numerous amoebae in the advancing wall of the abscess and there may be a few in the pus within the abscess, but this is essentially sterile. The pus is semi-liquid and chocolate brown in color, although in long-standing cases it may be yellow.

Diagnosis of Amoebiasis

History—Briefly then a history of chronic recurrent diarrhoea in an individual who has been overseas, especially in the Mediterranean or East, who is in relatively good health or moderately incapacitated or "run down" with vague abdominal complaints, should prompt to suspect the infection.

Physical Examination—There is usually tenderness on deep pressure over the sigmoid just medial to the anterior superior spine of the ilium. This has been called the "Amoebic Sign Post" Manson-Bahr. The liver is very frequently slightly enlarged and tender in these patients.

Frank Amoebic Hepatitis and Abscess have not been dealt with earlier.

Exam of Stools—E.H. either free or encysted must be demonstrated to render the diagnosis of intestinal Amoebiasis absolutely certain.

If the patient has diarrhoea or dysentery many amoebae will likely be found provided the stool is examined while fresh and warm. This is essential because the amoebae rapidly lose their motility once passed and cooled to room temperature.

If the stool is formed only cysts are likely to be found.

The three-stool examination has largely been adopted and is the method used by Dr. Williams at Deer Lodge Hospital. Of his 65 positive cases 60% were found at the first examination, 14% added on the second, and 14% on the third.

Sigmoidoscopy—Sigmoidoscopy is of value in the diagnosis as well as in observing progress under treatment. According to Manson-Bahr lesions occur in the rectum and sigmoid in 80% of cases at some stage of the infection. The lesions are usually characteristic; small superficial ulcers in the acute phase, somewhat deeper in the chronic, the intervening mucosa is usually normal. The ulcers are usually on the valvula of Houston or on prominent folds of the bowel wall.

Amoebae may be found in scrapings from the base of the ulcers or in the mucous adherent to the bowel wall when they are not demonstrated in stools. The material should be examined microscopically at the table-side or transported immediately to the laboratory in a small quantity of warm, normal saline.

X-Ray Examination is usually disappointing unless an amoebic granuloma is present.

Complement Fixation is of value in doubtful cases.

Treatment

Emetine is probably the most valuable specific drug; however, when used alone it will eliminate the infection in only 15% of cases, and therefore must be used in combination with other drugs. These are:

1. The Organic Arsenicals
Carbarsone (1 tab = 0.25 gms. or 4 grs.)
Stovarsol (1 tab = 4 grs.)
2. The Oxyquinoline drugs
Yatren (Syn. Chionofon, Quinoxyl)
Diodoquin (1 tab = 3.2 grs.)

These are combinations of oxyquinoline sulphonic acid and various proportions of iodine or chlorine.

The mode of action of these various drugs is different.

Emetine Hcl. given intramuscularly has a selective action on the Amoebae in the tissues only.

When Emetine Bismuth Iodide is given by mouth the emetine and iodine are liberated in the bowel and these have a special action on the cysts in the bowel.

The Oxyquinoline drugs are likewise incompletely absorbed and act mainly on bowel surface and intestinal contents.

The arsenicals act both in the tissues and the intestinal contents.

Most of these drugs are toxic and cumulative and cannot be given without close supervision.

Emetine is particularly toxic to the myocardium and the patient must be kept strictly in bed when being given either Emetine Hcl. or E.B.I.

The arsenicals and oxyquinoline drugs are less toxic but may cause damage to liver and kidney particularly if these are previously diseased. The dangers of overdosage of arsenicals are well known. The oxyquinolines are probably the least toxic.

Various combinations of these drugs are recommended by British and American authorities. Rather than try to enumerate all these, the routine followed by us as recommended by the British Consultant Physician in the Mediterranean theatre will be described.

Amoebic Dysentery with Vegetative E.H. in Stools

Emetine Hcl. I.M., 1 grain daily 3 days (4 to 6).

E.B.I. (per ora), 3 grains daily 12 days.

The E.B.I. is given at h.s. on an empty stomach together with 1½ grs. of Nembutal or suitable sedative as this drug is very irritative. Concurrently with the E.B.I. a Yatren retention enema is to be given daily in a.m. After defaecation the patient should be given a soda bicarbonate enema wash out, then given 200 cc. of a 2.5% Yatren solution to be retained 6 hours if possible. After the first six days the strength should be increased to 4% if it is well tolerated.

During the above 15 days the patient is to be kept strictly in bed. During the remainder of his treatment the patient may be ambulant. This consists of Carbarsone or Stovarsol 1 tab. b.i.d. for 12 days, or if Diodoquin is available this may be given in place of the Arsenicals 3 tablets t.i.d.

for 20 days. If necessary the treatment may be repeated after one week rest.

In the United States Diodoquin alone by mouth, 3 tabs. t.i.d. for 20 days has been used.

Patients who have had chronic diarrhoea may probably have a co-existent Bacillary dysentery and therefore should have a course of sulphaguanidine or sulphasuxidine together with the emetine injections.

Treatment of Cyst Passers

Here the injections of Emetine may be omitted and only the E.B.I. and retention enemata given, followed by Carbarsone, Stovarsol or Diodoquin as outlined above. Perhaps the retention enemata may be omitted with safety but it is felt that if the patient is being treated in hospital it should be given as extra insurance. Again in the United States Diodoquin alone has been used.

Amoebic Hepatitis

Emetine is specific and the drug of choice. Emetine Hcl. 1 gr. I.M. daily 12 days. Then an interval of 21 days during which Carbarsone 1 tab. b.i.d. is given for 7 days. At the end of the 21 days Emetine I.M. for 6 days.

Liver Abscess

Emetine as for Amoebic Hepatitis is given, plus aspiration of the abscess if it is in the right lobe of the liver. However, if the left lobe is affected surgical drainage will probably be necessary.

Prognosis

This depends on whether the patient has been treated early or late in the course of his infection and upon the patient's individual resistance to the infection. It is excellent in those treated during the first one or two acute attacks. Chronic cases may require repeated courses of treatment, but generally the prognosis is good. In amoebic abscess of the liver the outlook is fairly good with adequate treatment and aspiration. If operation is necessary the mortality rises, as it does also if the abscess ruptures into lung or pleural or abdominal cavity. However, if the etiology is recognized and the pleura or abdomen drained and emetine given there is a good chance of recovery.

Summary

The epidemiology, clinical manifestations, pathology, diagnosis and treatment of Amoebiasis have been outlined. Their importance to the practitioner of Manitoba has been stressed.

References

1. The Dysenteric Disorders—P. Manson-Bahr.
2. Manson's Tropical Diseases—P. Manson-Bahr.
3. Etiology, Diagnosis and Treatment of Amoebiasis—C. F. Craig.
4. Manual of Tropical Medicine, Military Medical Manuals, National Research Council.
5. Various Military Medical Memoranda.
6. Report to be published by Dr. T. H. Williams.

The Impact of Military Surgery on Civilian Practice

Gordon S. Fahrni, M.D., Ch.M., F.R.C.S. (C.), F.A.C.S.

Introduction

I have been asked on more than one occasion by members of our profession, representing different walks in civilian medicine, to record in readable style some of the more important developments in surgery during the late war.

When your editor asked for a contribution on the subject, I thought this was an opportunity to pass on to the profession at large in a brief, informal manner a few of the experiences of army surgeons.

It is true that these are all on record in the various files at the central registry in Ottawa and the great volume of material there available represents a challenge to the military and D.V.A. authorities to survey and break down the mass of information on medical and surgical subjects. Up to date, little of this has filtered through to civilian practice.

What I have to say will be familiar to all army surgeons, but what may appear as platitudes to them, may not be so well known by the many M.O.'s who served in administrative posts and in the field as R.M.O.'s and in mobile field units, many of whom are now back in civilian practice. It is not to these, however, that this paper is directed, so much as to the civilian profession at large.

It would seem sound that the experience of surgeons in the late war should be passed on to civilian practice in order that new developments may be tested in the crucible of volume and time.

Some Disabilities Commonly Seen in the Recruit

Not the least important part of fighting a war is the recruiting and training of the army. By 1942 the need for recruits became more pressing. A survey of the rejections disclosed that hernia accounted for some 7%, varicose veins over 6%, while hydrocele, internal derangement of the knee joint, flat feet and other surgical conditions helped to swell the total.

It was decided in the fall of 1942 that candidates for enlistment having certain lesions correctable by surgery, should be enlisted and surgical treatment carried out in the service. This was made retroactive whenever suitable rejected personnel could be contacted.

The first groups considered were those afflicted with either hernia or varicose veins and sometimes both. These had made up almost 14% of the rejections. A few months later, operative treatment of these two groups began. Only well-equipped hospitals with a competent surgical staff, were allowed to carry on this work.

A special form was filled in by surgeons the time of operation on each hernia. Another form is filled by the examining surgeon of the discharge board on each soldier operated upon for this condition in the army, while in Canada or overseas.

In this way a fairly accurate picture should be available as to the results of the operation of herniorrhaphy in soldiers if and when the records are searched. In recruits alone, some fifteen thousand were salvaged and many hundreds of serving soldiers, who developed hernia in the army were treated surgically, since the beginning of the war. My general impression is that the incidence of recurrence is rather small and with this opinion most of the surgeons, to whom I have spoken, agree.

When results are forthcoming from the records there is provision made for breaking them down under the following headings:

1. Type of hernia.
2. Type of operation.
3. Suture material used.
4. Complications and recurrence.
5. Operating surgeon.

The result of surgical treatment of the varicose vein group in recruits was also good. Any complication such as impaired nutrition of the skin with or without ulceration constituted grounds for rejection, so that only moderately favorable candidates were considered for surgery.

Recruits with hydrocele of the tunica vaginalis did well following operation.

Varicocele as a rule was ignored and it was the exception indeed to see one requiring surgical treatment.

Thus, the old bogey of rejecting for military service, recruits with hernia, varicose veins or varicocele was discarded.

The lesion of the knee joint seen most commonly was one of injury to either the medial or lateral meniscus. Not uncommonly, the condition was quiescent on enlistment, exacerbation manifesting itself only after beginning training. These individuals were then placed in the same category as those developing symptoms for the first time as serving soldiers.

Deformities of the foot were a fertile cause of rejection, the commonest disability was flat planus. In assessing the flat foot the anatomical deformity was discounted largely, in accordance with its functional capacity. A moderately severe degree of flat foot is compatible with reasonable army service, if the foot is supple and painless, flexible and the muscle action such as to meet any ordinary demand. This is in contrast to the

the mildly flat foot with some painful rigidity and or defective muscle action.

Foot strain in military training is something different again and often affects feet, that appear anatomically normal. It usually appears early in basic training but occasionally shows up for the first time in advanced training. This condition represents an imbalance between the physical stamina of the foot, chiefly the controlling muscles and the speed or tempo with which military training is applied and accelerated.

The wise M.O. soon learned not to send these soldiers back to the depot for disposal, but to give them a few days rest and then institute a series of foot exercises designed to more fully develop the muscles controlling the feet. Following this they are soon ready to resume training, but often at a tempo slower than the original programme. In a large training centre it was sometimes necessary to form a special squad for this purpose, but the effort was well worth while as these soldiers, once hardened, rarely broke down again and the salvage in military personnel was considerable.

Where the Training Centre was unable to organize a special squad for these and somewhat similar conditions, the soldiers were returned to the depot, where a suitable training programme was organized rather than have these men discharged from the service. Experience has shown that special foot exercises incorporated in the general basic training programme is well worth while.

Pes cavus offers much less in the way of military service. Any reasonable degree of claw-foot is usually associated with diminished flexibility and any attempt to force the issue usually results in a painful foot. Such a recruit is a candidate for rejection.

Such abnormalities as accessory scaphoids, bunions, hammer toes, short first metatarsals callus and corns are often compatible with reasonable military service, if proper care of the feet is instituted, a chore that is well worth while as any R.M.O. will testify.

Training Injuries

In many respects they do not differ greatly from those seen in civilian life, but with the stress on mechanization and speed in army training, the shattering of bone and soft tissues seemed to produce a greater degree of mutilation, than ordinarily seen in industrial accidents. Perhaps this is the reason that fat embolism was seen so much more frequently than in fractures of civilian life. One Canadian surgeon in England has personally attended twelve cases of fat embolism, complicating fractures received during military training. Symptoms sometimes appear

within the first twelve hours after injury. Petechial haemorrhage may appear later, fat in the urine may also help in the diagnosis, but increasing stupor is the rule and only too commonly the diagnosis is made at post-mortem. There is no specific treatment and the only known prophylaxis is careful handling and easy, early immobilization of fractures of long bones.

March or Fatigue Fractures is a fracture rarely seen in civilian life, but very common in early military training. The bones most commonly affected are the metatarsals and of these the second and third are more prone to involvement. Other bones I have seen so affected are the tibia, femur, rami of the pubes and the first and second ribs.

Following advanced training, this fracture rarely occurs. It is seen usually, in the young trainee, between the third and twelfth week of training. He complains of soreness in his foot, usually after a long forced march and on examination there may be only slight swelling of the dorsum of the foot, but always tenderness over the fracture. One or more bones may be fractured, sometimes one or more bones in both feet. In the early days of the fracture it may be difficult to detect by X-ray, but callus soon shows up. (Fig. 1 and 2.)

The mechanism is not clearly understood, but it is thought that bone reacts much like steel when subjected to repeated physical stresses and there comes a time when the bony continuity is unable to withstand the degree of stress. It is thought by some and with them I agree, that fatigue of the muscles controlling the foot, particularly the tibialis posticus and peroneus longus, permits undue stresses to be imposed on the metatarsus and this perhaps is the chief causative factor in March fracture.

The treatment varies in different hands. There is rarely appreciable displacement and if the patient is kept off his foot for a week or so, with bed exercises, he may then be allowed heel weight-bearing with every expectation that sound union will progress steadily. Some prefer the walking plaster cast, but this causes more disuse muscular atrophy, requiring a longer period of convalescence and training after the fracture is soundly united.

I have never seen a case of nonunion, but I did see a case of delayed union in a foot with fracture of second, third and fourth metatarsals that had been allowed early heel weight-bearing. After two months, no union had occurred. A plaster of Paris cast was applied and the patient kept in bed for two weeks, after which he got about in a walking cast and sound union had taken place two months later.



Fig. 1
March fracture of the distal third of 2nd, 3rd and 4th metatarsal bones.



Fig. 2

The callus which usually develops early after fracture is seen in the 2nd metatarsal of each foot in the same individual.

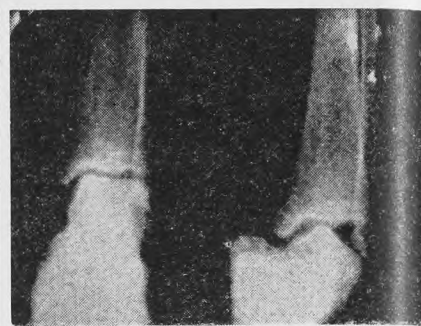


Fig. 3

This radiograph shows two pictures of the same ankle in which avulsion of the lateral ligament has taken place. The second view was taken when the foot was forcibly inverted under pentothal sodium anaesthesia and demonstrates the deformity occurring when the foot is inverted.

Almost without exception, these patients all went back to full duty. The fracture usually occurred in apparently normal feet.

Injuries About the Ankle Joint—This is the commonest site of injury in army training and may vary from a slight tearing of a few fibres of a ligament to a severe compound multiple fracture and dislocation of the ankle.

In all ankle joint injuries we have stressed the need for a careful appraisal of the damage done. Usually the physical examination should reveal pretty well, the amount of damage done in simple sprains, but when marked swelling and ecchymosis with moderate or more pain and tenderness is present, it is not sufficient to treat the injury as a sprain alone, even in the light of a normal radiologic bony outline.

Even when no fracture occurs, it is important to be sure that the lateral ligament of the ankle joint is intact. This ligament, unlike the strong deltoid ligament on the medial aspect of the ankle, is prone to rupture and if this is not recognized and it should be treated as a sprain, by ambulatory treatment, the ligament may fail to heal. This leaves an ankle that permits the foot to become inverted at any time later through rotation outwards and forwards of the talus, which is a very severe disability even in civilian life and later reconstruction of the lateral ligament has not proved very satisfactory, in the cases I have seen. Rupture of the anterior and middle fasciculus of the lateral ligament is suffi-

cient to allow the talus to rotate, so that its upper convex articular surface looks outwards.

Where this lesion is suspected, either novocaine into the joint or pentothal sodium anaesthesia will permit manipulation of the foot at the ankle joint and if the ligament is ruptured marked inversion of the foot will show radiographically, the deformity described above. (Fig. 3.)

There have been many such cases in the service, and it has been found that a plaster Paris cast applied with the foot everted and kept on for two months, permits repair of the ligament and a useful joint. Weight-bearing may be permitted shortly after applying the cast.

Another soft tissue injury that must be recognized is rupture of the inferior tibio-fibular ligament. Failure to recognize and correct this may lead to diastasis of the lower ends of these two bones and widening of the mortise of the ankle joint gives instability at the ankle. This is more commonly seen as a complication of Potts' fracture.

The ambulatory treatment of simple sprains and strains of the ankle joint has much to recommend it and the convalescence of the patient is greatly shortened. Injection of procaine hydrochloride was recommended by Leriche as a preliminary measure but no doubt the weight-bearing is the chief curative factor. Firm support of the ankle before walking seems to be of advantage also. This may be supplied by firm bandaging following which a firmly laced army boot is ideal.

I cannot leave the ankle joint without mentioning the importance of early recognition of a poorly reduced fracture of the internal malleolus, which is almost sure to result in fibrous union. Occasionally even this gives little discomfort but usually in the army, they are not good enough and give a weak painful ankle. In such cases a bone graft may give a satisfactory result but it would have been much better to have anticipated this at the beginning of treatment. It is quite a simple operation to expose the fracture, turn out and excise the offending intervening periosteum and any other soft tissue and fix the approximated fragment by a screw nail.

Perhaps the commonest error in applying plaster to immobilize the ankle joint, is failure to dorsi-flex the foot sufficiently to have the wedge-shaped talus fit snugly into the mortise. Any dead space in the mortise becomes filled with blood clot which becomes organized and effectively prevents the talus entering at a later date. This is the cause of all too many patients seen, following injuries about the ankle joint, who go about with a degree of foot drop for which any form of physical medicine later may be of little help.

Fractured Carpal Scaphoid—The commonest serious lesion of the hand was fracture of the carpal scaphoid bone. Unlike fracture of a metatarsal bone, these fractures heal more slowly and are much more prone to non-union. In civilian practice one would see something like 20 Colles fractures for every one of the carpal scaphoid. In this war the incidence was reversed and in training, hundreds of the latter were encountered.

Early in the war, these fractures were not recognized so readily as later on and the tendency was to err on the side of late and too little immobilization. The result was, that a number of painful wrists from non-union were seen all too often. The treatment of these is far from satisfactory; bone peg-graft, removal of one or both fragments, or leaving them alone have all been tried as in the past, but the ideal treatment is to recognize the fracture immediately, or soon after it occurs and immobilize the wrist by plaster of Paris for about three months.

The rapidity of union is in direct proportion to how close the fracture is to the distal pole. For instance, any fracture through or close to the tubercle usually heals readily, while a fracture through the waist or proximal, heals more slowly. The proximal fragment may undergo aseptic necrosis and then has to be revascularized before bony union of the fragments occurs. The reason for this is, that the blood vessels enter the bone at or near the ligamentous attachments and a fracture line, proximal to this level, effectively tears the vessels.

It has been stressed repeatedly, that a diagnosis of a sprain of the wrist should not be made, in the presence of suggestive tenderness over the scaphoid, even in the light of an apparently normal X-ray study in three directions. When in doubt immobilize the wrist, for at least two weeks, after which an X-ray plate should show the fracture if present.

In immobilizing the wrist in plaster, it is all-important to extend the cast, no lower than the level of the life line of the palm. If this is not kept in mind the inclination is to view the hand from the back and extend the cast to the finger webs, which unfortunately immobilizes the metacarpo-phalangeal joints, giving an unnecessary disability when the cast is removed.

Wounds

Some Historical Data—I wish to refer to a few of the important developments, in the historical evolution of surgery, particularly that growing out of past wars, as they impinge forcibly on our present concept of the care of wounds.

The great physician, Hippocrates (460-377 B.C.) in his aphorisms as to the "healing power of nature and rest," made a notable contribution to medicine, but his advocacy of the use of "fire" as implemented by the cautery and the use of boiling oil in the care of wounds was not so fortunate.

Galen (131-201 A.D.) made a great contribution, in that he advocated experimental physiology, but his teaching that suppuration was a necessary part in the healing of wounds and his strong belief in the value of certain drugs and herbs in the healing process, held back in no small way advances in this branch of medicine.

The school of Hippocrates and Galen were rivals over the next thirteen centuries and it was not until the middle of the 16th century that authentic doubt began to blossom and to point the way to a more scientific concept of surgical principles.

Vesalius (1514-1564) wrote his book, "De Fabrica Humani Corporis," which challenged and refuted the anatomy of Galen. Servetus (1511-1553) made his notable contribution on the pulmonary circulation and oxygenation of the venous blood, through its circulation in the lungs.

Ambrose Paré (1509-1590) showed that wounds healed more kindly if not cauterized with boiling oil.

Harvey's (1578-1657) experimental work leading to his monumental contribution on the circulation of the blood and Hunter's (1728-1793) teaching of anatomy some years later, combined to put the practice of medicine on a much firmer foundation.

Desault (1744-1795) was the pioneer of debridement of wounds, although Botallo, two hundred years earlier, had advocated the removal of dead tissue from wounds.

Larrey (1766-1842), a pupil of Desault, was an early exponent of excision of wounds. He was chief surgeon to the French army throughout the Napoleonic wars and advocated early debridement, rather than late, and his ambulance service was established with this in view.

During the Wars of the Caucasus (1847) and the Crimea (1854) Pirogoff (1810-1881) the great Russian surgeon adopted such principles in the care of the wounded, as early surgical care, debridement, ether anaesthesia, plaster of Paris bandages and the use of female nurses, even as Florence Nightingale was organizing such a nursing service for the British.

In the Franco-Prussian War in 1870, Ollier (1825-1900) used plaster of Paris to encase the wounded limb, explaining as his reasons, the need for rest of the injured part and to prevent contamination, by pathogenic organisms.

Some three-quarters of a century ago, the work of Pasteur on fermentation and heat sterilization, followed by Lister on antiseptics and then asepsis marked a great expansion in the scope and efficiency of surgery.

The experiences of the first great war made major contributions to the care of wounds. The work of Winnett Orr in using plaster of Paris casts on injured limbs, after debridement of wounds, was followed up by Trueta in the Spanish Civil War, not yet a decade past, in which he practiced treatment of compound fractures by debridement of the wound, followed by skin-tight plaster casts.

It will be seen from the foregoing that we entered the late war with ample precedent for many of the principles that are now incorporated in the modern concept of the management of war wounds.

Shock—This subject is one of major importance in war surgery and to combat it successfully it is important to recognize it early and institute measures to restore the falling blood volume, by whole blood, serum or plasma or other blood substitutes.

The subject of shock is so big, that I shall touch only on a few of the most important practical points that have occupied the attention of Research groups, transfusion units and advanced surgical units, from whom much of the information has come.

Not so long ago it was held by many that if the blood pressure remained as high as around 100 mm hg. there was no great danger to the patient. This attitude of false security fails to recognize that after a severe injury, with the loss

of a lot of blood, the sympathetic nervous system reacts by contracting the peripheral circulation which in turn contracts the vascular bed. This permits a tremendous loss of blood volume, with still a reasonable blood pressure, sufficient to supply at least a minimum circulation to the vital centres. Anaesthesia at this time, particularly spinal anaesthetic, tends to release this supply with catastrophic results.

It has been found that the loss of as much as two litres of blood (one-third of the total) may still be compatible with recovery, if prompt blood replacement is carried out.

Such practical points, as estimating the amount of blood lost on the ground or in the clothes and noting the contraction of superficial veins, the cold extremities and cold forehead, should give warning of severe shock and the need for immediate resuscitation, by increasing the blood volume before anoxia of vital centres develops sufficient to bring about irreversible shock.

Burns—As late as the evacuation of Dunkirk early in the summer of 1940, Atkins estimated that 60% of the deaths from burns were due to shock. These figures fit fairly well the reports of previous civilian surveys.

Since it has been recognized that the great cause of shock in burns is loss of blood volume through seepage of blood serum from the circulation into the extra-vascular spaces, early replacement by transfusions of blood serum or plasma has changed the whole picture.

The next step in the care of burns is to keep the injured surface clean, by covering early with sterile dressings over some bland oily preparation such as sterile vaseline. A firm, bulky occlusive dressing is applied and left on for perhaps ten days, all of which should be carried out under strict aseptic precautions. This prevents infection and carries the patient over the period of infection and toxæmia which are the second and third complicating factors of burns. When the dressings are removed in ten days or more (in the operating room), the depth of the burn is readily recognizable. The first and second degree burns will heal and where full thickness of skin has been destroyed, a split skin graft should be applied as soon as the sloughs are thrown off.

To summarize:

1. Treat the shock.
2. Keep the wound covered after minimum debridement and by so doing keep it clean. This, infrequent dressings are advocated.
3. Replace the destroyed skin as early as possible. This prevents infection and fibrosis of the raw surface which will occur if it is left uncovered early by its natural envelope.

Management of War Wounds—Much of this is now available in the literature and nothing more

than brief mention of the principal factors involved and an incomplete comparison with pre-war practice, shall be attempted.

As has already been pointed out, we entered the war with considerable knowledge of most

of the principles incorporated in the modern concept of the care of wounds. Some of these have been modified and refined and new principles have been added, largely out of experiences growing out of the late war. Chart 1 is an attempt to depict the situation graphically.

Chart 1	
The Modern Concept of Treatment of Wounds	
Prior to the Late War	Modifications and Refinements During This War
Early Treatment	The field surgical units sent up to a forward level were able to bring early surgery to such needy conditions as intraperitoneal haemorrhage and perforations, traumatic amputations and other serious wounds.
Shock Therapy	The F.S.U.'s supplemented by Field Transfusion Units were able to help in meeting the challenge of reduced blood volume, by early resuscitation.
Asepsis	The comparatively recent work of Hare and others has been accepted. It is, that infection of wounds with pathogenic organisms, comes chiefly from human contamination usually from the naso-pharynx — hence the urgency of covering a wound early, infrequent dressings by masked attendants and other aseptic precautions.
Debridement	More radical than formerly and no attempt to finalize the setting of fractures if present.
Drainage	No attempt at any closure of the wound — a sterile dressing — sterile vaseline may be applied to the raw surfaces first.
Rest	To intensify this the injured limb may be encased in plaster.
Physical Medicine	The knowledge, that early active exercises of bed patients is so important and the projection of this feature into the field of massage and what is generally known as physio-therapy, during their out of bed convalescence, has stimulated interest in this broad field of medicine, so greatly overlooked by the profession heretofore.

New Principles Developed in the Late War

From the fourth to the seventh day after debridement the wound is closed much as a clean operative wound. The consistency of clean healing is most gratifying with the reduction in the time of convalescence, morbidity and later disabilities from fibrosis should the wound be left to heal by granulation. The principles as mentioned under asepsis are imperative if early secondary suture is to be highly successful. In the case of a compound fracture, alignment and fixation are done at this stage of treatment. All seriously wounded were given sulphonamides beginning at a forward level. Penicillin, a product of the war years, when available, was used in all seriously wounded. Perhaps its most striking beneficial qualities were manifested by alternating with aspiration, its local application into such closed spaces as the wounded pleural cavities and joints. Many a mutilated and infected knee joint now functions normally because of its efficacy.

Gas Gangrene was seen much less in this, than in former wars. It was not at all unusual to get a growth, positive for the *Clastridia Welchii*, from a dirty wound without any apparent involvement of the muscle proper. This was called a cellulitis and with adequate wound excision and the use of penicillin as in Chart 1, the wound usually healed kindly after an early secondary suture; moreover, cultures taken from the wound surface, at the time of secondary suture, almost invariably were negative for that anaerobe.

When there was gross involvement of muscle the prognosis was more serious but excision of all dead tissue which "ipso facto" means at least all tissue involved by pathogenic gas forming organisms, usually gave a satisfactory result. The need for amputation is tremendously reduced

when reasonably early adequate surgery is done. It is felt by most surgeons, that good surgery is the chief factor in the successful care of this infection. Helpful as penicillin may be, its use cannot permit any slackening in the adequacy of the surgical programme.

Tetanus in this war in the Canadian Army, was conspicuous by its absence. The British army saw the occasional case in wounded soldiers who had not been immunized. I saw only one, and he was a wounded French civilian with well-established tetanus and of all the Canadian Army surgeons I have talked with, only one had seen two cases. This speaks well for the efficacy of the tetanus toxoid immunization programme in the Canadian Army.

Comment

This paper has been an effort to mention, in a few words, a number of subjects on which I thought the experience of the army might be helpful to some in civilian practice. I seek therefore the tolerance of the reader when, in writing on such important subjects as flat feet, shock, burns and war wounds, I have, because of the need of brevity, mentioned only what I thought were the more pressing points.

The army training programme is so much more arduous than almost any type of civilian life that many recruits not conscious of any disability on enlistment would break down during their basic or advanced training. Some of the causes were as follows:

(1) Underweight and subphysical development with occasionally, varying degrees of malnutrition. In 1943 a programme was undertaken to make soldiers out of these poor physical specimens. They were collected and trained as a particular group in certain training centres and a programme of physical training, special feeding and morale building was undertaken. To contrast a company of these young men, three months after training with their appearances on enlistment, is all that would be necessary to change the mind of any opponents to universal youth training. They made smart, keen and efficient soldiers.

(2) Backache — Scheuermann's Disease, Marie Strumpell's Disease, spina bifida occulta, spondylolisthesis and varying degree of spondylitis from different causes, very often presented themselves at the Reception Centre with no complaints and no history of trouble. With no gross, obvious disability these patients could not be spotted, until

they broke down and an investigation with the help of the X-ray, etc., was carried out.

(3) The lower limb went lame, commonly, from such conditions as a loose knee-cartilage, foreign body in the knee sometimes secondary to osteochondritis dessicans, Osgoode Schlatter's disease, sciatica which was sometimes traced to a herniated intervertebral disc, or one of the various causes in the feet, some of which already have been mentioned. When I state that one radiologist, in a period of nine months, picked up 12 cases of Osgoode Schlatter's Disease in young recruits going lame in training, the significance of the effect of the speeded up army programme may be partly appreciated, particularly on an individual but the physically sound.

The experiences of the British and American armies were much the same as ours in the training programme and their convictions on the advantages of the modern care of war wounds are no less enthusiastic.

Everyone does not realize the large part played by the surgery of trauma in war surgery. The result has been that nearly all our young surgeons in the army have developed considerable proficiency in this field. It is hoped that they should have in the field of civilian surgery, ample opportunity to continue their interest and endeavors in this field.

Before bringing this commentary to a close I would like to record the great credit that is due the band of young surgeons, who in the enthusiasm of comparative youth, with the judgment and wisdom of older men, toiled unceasingly, many of them on a forward level in battle, to attain a higher standard of treatment of the wounded which might be attained.

Special Meeting Notice

A special meeting of the Manitoba Medical Association will be held in the Royal Alexandra Hotel, March 13th and 14th.

As this meeting is of vital importance, every member is requested to attend.

Clinical Luncheon Reports

St. Boniface Hospital

A Case of Tracheo-Oesophageal Fistula Without Oesophageal Atresia

J. Hollenberg and S. Israels

Baby (H) was seen eight hours after delivery because of elevated temperature and respiratory difficulty. The latter followed the administration of glucose. Fistula between trachea and oesophagus was suspected and a lipiodol visualization of the oesophagus showed the iodized oil passing from oesophagus to trachea. A Levine tube was passed readily into the stomach indicating absence of oesophageal atresia. Surgery was decided upon and under local anesthesia followed by ether, the chest was entered and the fistulous tract ligated and severed. The tract was medial to the azygous vein, at the level of the tracheal bifurcation. There was no evidence of oesophageal atresia in the thoracic portion of the oesophagus. An accidental pneumothorax occurred during the operation, but the anesthetist promptly inflated the lung and the hole in the pleura was closed.

The post-operative course was uneventful, except for a minor infection of the wound in the leg which had been used to administer blood via the saphenous vein during the operation and post-operatively.

After two weeks, the baby was sent home and is gaining weight progressively and normally.

S. Israels.

St. Joseph's Hospital

Treatment of Thyrotoxicosis with Thiouracil

Leonora Hawirko, M.D.

The patient, age 45, was admitted to hospital on October 6th, 1945. She had all the typical symptoms of hyperthyroidism—weakness, palpitation, nervousness, heat intolerance, muscle weakness and loss of weight. These symptoms had been present for about two months. On physical examination her skin was hot and moist. There was slight exophthalmos. The mouth and throat were negative. There was a diffuse enlargement of the thyroid gland on both sides. The heart was normal in size, sounds and rhythm but the rate was 120 per minute. The blood pressure was 110/50. The abdomen was negative. There was some quadriiceps weakness. The BMR was plus 62. She was advised to have the gland removed but, as she was very much adverse to this, it was decided to put her on Thiouracil until she had made up her mind regarding operation. The patient was told about the dangers of Thiouracil and warned that, if she decided against surgery, she would need to be on treatment for at least six months

and that even then there might be a recurrence of her symptoms after treatment was discontinued. She decided against operation.

Thiouracil was given thus: 0.3 gms. t.i.d. for 3 days; 0.2 gms. t.i.d. for 6 days; 0.1 gm. 4 times daily. At the end of 4 weeks this was reduced to 0.1 gm. three times daily; at the end of 6 weeks to 0.1 gm. twice daily and at the end of 12 weeks to 0.1 gm. daily.

The action of Thiouracil on the pituitary leads to suppression of the thyroid stimulating hormone and on the thyroid leads to inhibition of iodine uptake.

The drug is rapidly absorbed, can be demonstrated in the blood in 15 minutes, and reaches maximum concentration in the tissues in 30 minutes. Thiouracil can be recovered from all tissues, but the concentration is greatest in the pituitary, thyroid and adrenal glands and in the bone marrow.

The patient was also put on Squibb's Special Vitamins, 1 b.i.d. These contain 75 mg. of Vitamin C each and cevitamic acid is valuable as it counteracts the depressing effect of Thiouracil on the bone marrow. The other vitamins, especially the B Complex part, replace the depleted energy stores of the patient. The vitamins have no effect on the B.M.R.

The patient also received Dessicated Thyroid gr. 1 daily. The action of thyroid is (a) to enhance the effect of Thiouracil by further depressing the thyroid stimulating hormone of the pituitary; (b) to decrease the exophthalmos (it also supplies sufficient thyroid to act on the end organs, e.g., eye); (c) to prevent pitting edema, which may occur with Thiouracil (the antidiuretic property of thyroid opposes the water storage property of the pituitary); (d) to increase the sense of well being; (e) to prevent the increase in size of gland which occurs with Thiouracil. Thyroid has no inhibitory effect on the action of Thiouracil in lowering the BMR.

Soda Bicarbonate was also given to decrease the effect of hematuria and crystalluria. Thiouracil is related to sulpha drugs which also causes these complications.

White blood counts were done twice a week to detect any leucopenia, for agranulocytosis is the most serious toxic manifestation.

Results: Improvement was noticed within two weeks. The weakness, palpitation and heat intolerance were the first symptoms to improve and in this patient the last symptom to disappear was the muscle weakness.

There was some improvement in the exophthalmos and the thyroid gland showed a definite reduction in size. On November 8, 1945, the basal

metabolic rate was plus 31; on December 6, 1945, it was plus 8. The patient is still on a maintenance dose of .1 gm. of Thiouracil.

The length of time required for lowering of the BMR with Thiouracil is approximately one day of treatment for each point of BMR and varies between three and five weeks. If the patient has Lugol's solution before Thiouracil is given the response is slower. The higher the BMR the more rapid and more dramatic the response. Most symptoms are gone in five weeks. No case is refractory to treatment with Thiouracil and when results are poor it is because either dosage has been too small or the duration of treatment too short. In one case treatment was extended to 34 weeks.

Variations in Dosage: Minimum dosage is given in malignant exophthalmos and when the gland is very large. Maximum dosage may be given in the presence of cardiac decompensation.

In thyrotoxicosis associated with diabetes, thiouracil may have no effect on the diabetes, but at times decreases the amount of insulin necessary.

In treating pregnant women it should be remembered that Thiouracil gets into the foetal circulation through the placenta and may cause a hypothyroid state in the child. The mother should be given Lugol's solution for two or three weeks before delivery. If the baby is born with an enlarged thyroid the swelling usually disappears in about three months. Thiouracil inhibits the production of thyroxin by the foetal thyroid.

Operation is the treatment of choice when there are pressure symptoms or for cosmetic reasons or when the patient is unco-operative; and then it should be deferred until the patient has been on Thiouracil for five weeks—that is, until BMR is normal. Operation is then usually attended with less alteration of pulse and blood pressure than in the iodine-treated patient. There is also less disturbance of temperature and pulse post-operatively. Thiouracil should be discontinued six days after operation. If the condition is of long standing the gland is firm—not friable—after treatment with Thiouracil. Otherwise this friability can be avoided by giving iodine for two or three weeks before operation. Before removing the gland it is important to have the BMR down to normal, not to plus 20 as in iodine treated patients.

Toxic Symptoms: These occurred more frequently when Thiouracil was used in larger doses than now, but they still occur and are important.

(1) **Leucopenia**—This is the commonest and most serious. It is thought to be due to sensitivity rather than to cumulative action. The leucopenia usually occurs in the second or third week, but may occur at any time. A white cell count below 4,000 is an indication to stop the drug for 72

hours. If the count falls below 3,500 the drug should be discontinued. Cevitamic acid seems to counteract the depressant effect.

(2) **Urticaria** may occur associated with chills, high fever, sore throat and the symptoms of grippe. This usually occurs within the first ten days of treatment. If after stopping the drug and then resuming it a similar response occurs within six hours it is thought that we are dealing with hypersensitivity rather than with a toxic reaction.

(3) **Myxoedema**—This can be avoided by keeping the BMR above plus 5.

(4) **Edema**—This occurs within the first six weeks and appears around the eyes and legs. It is not so apt to occur if thyroid also is given.

(5) **Hematuria and Crystalluria** can occur and can be avoided by use of soda bicarbonate.

(6) **Skin Eruptions** such as pruritus or macules and papular lesions are not uncommon and may or may not be associated with fever.

Other less common signs of toxicity are: Jaundice, Nausea, Vomiting and Diarrhea (may occur after only one dose), Headache and Arthralgia, Enlargement of Salivary Glands, Dryness in Mouth. Still more unusual reactions are myoclonic contraction of the facial muscles with severe somnolence and confusion, and transient painful swelling of subcutaneous tissue.

How long should treatment be maintained? This is difficult to answer. Of six patients who discontinued treatment after being on Thiouracil for six to nine months, one had a remission in two months and the others were well at the end of six months.

To conclude: Thiouracil is a potent remedy for thyrotoxicosis. It is of special value in preparation for operation; when severe cardiac complications, age or other infirmity make the patient a poor surgical risk; and as a remedy in post-operative recurrences. It will not, however, replace operation when cosmetic results are important or where malignancy might have a chance to develop, or when time is a consideration. The dangers as well as the advantages of the drug must be borne in mind. Thiouracil is effective and potent; therefore, it must be used with understanding.

Victoria Hospital

Tuberculosis in a General Hospital

The importance of tuberculosis was given point by the presentation of four recent admissions to Victoria Hospital. Dr. Newman gave the story of a married woman of 40. She had been under treatment for eight weeks prior to his seeing her. The diagnosis was influenza. When seen by Dr. Newman she had the signs of pneumonia and she improved under sulphadiazine and expectorants.

torants. About a week later on re-examining the patient she was found to have apical rales. She was admitted to hospital and there her sputum was found to contain numerous acid-fast bacilli. The chest films revealed atypical tuberculosis.

Dr. Herschfield's patient was a woman of 25 who for three weeks had had cough, sweating and fatigue. Three years previously she had suffered from fatigue and anaemia but had been well since. There was no history of contact and her previous health had been good. The X-ray revealed infection of the lungs and the sputum was positive.

Dr. Hall reported a case of a 20-year-old woman who had been coughing up blood-stained sputum. Arrangements were made for X-ray examination but on the same night she had a large haemoptysis and was sent to hospital. No clue to the time of infection was given in the history. The X-ray showed active disease. No sputum could be obtained for examination.

In the absence of Dr. Strong, Dr. Morrison presented the fourth case. This was a patient who had been discharged as cured from a sanitarium seven years ago. This together with the pulmonary symptoms from which the patient complained led to admission to hospital. The plates showed active disease and the sputum was positive.

Discussion was opened by Dr. A. Sinclair who proceeded to enumerate the type of onset in tuberculosis. These he gave as 1, Pneumonic; 2, Catarrhal; 3, Pleural; 4, Insidious, and 5, with Haemorrhage. Pneumonia, he said, is often the forerunner of active tuberculosis and therefore every case of pneumonia should be checked after apparent recovery for evidence of tuberculosis. The catarrhal form of onset occurs when patients complain of very frequent head or chest colds. Pleurisy may remain dry for many weeks before becoming wet. Pleurisy with effusion is not invariably tuberculosis but so frequently is, that the association must never be forgotten. The disease often begins insidiously and can best be detected by routine X-ray of the lungs which may show disease even in apparently well people. Haemorrhage usually means that there has been delay in investigation.

Dr. Sinclair said also that in every case of cough with expectoration the doctor had the legal responsibility of making sure that tuberculosis was not present. This meant that sputum examination should be routine. He was in favour of routine X-rays of the chest in every hospital admission. He said that, according to the records, between three and four per cent of all the patients admitted to hospital had either healed or active tuberculosis.

In the diagnosis of tuberculosis there are five important points: 1, History. Too much care can-

not be taken with this. 2, Physical examination must also be thorough. 3, X-ray examination is essential for many early lesions can be discovered only in this way. 4, Laboratory investigation includes sputum examination and sputum culture in special media. 5, Tuberculin reaction. This method has recently returned to popularity. The patch, Von Pirquet and Mantoux tests are of great value especially to exclude tuberculosis as, for example, in fungus diseases which could cause calcification that might be erroneously attributed to tuberculosis.

Dr. Hall asked what was the incidence of positive tuberculin reactions in the general population of cities. He had heard it was 80% but his own experience with the Air Force did not agree. Dr. Sinclair said that 1% per year of a population became positive so that 20% of persons of 20 and 50% of persons of 50 would be positive.

The question of tuberculosis developing in nurses was brought up by Dr. Thompson. Dr. Sinclair said that of the practical nurses at St. Boniface Sanitarium the majority were negative on admittance, by the end of the first year 85% to 90% were positive and 10% showed active lesions. All affected nurses had recovered. He was trying out B.C.G. and believed that it was of value in some cases. At the Winnipeg General Hospital the percentage of positive reactors was: First year, 10%; second year, 30%; third year, about 40%.

The admission of active cases of tuberculosis to a general hospital was discussed. The protection of its nurses was a responsibility of the hospital, said Dr. Thompson, and for that reason efforts must be made to prevent the admission of active cases of tuberculosis. It was recognized that doctors would not knowingly admit open cases. However tuberculous people with medical or surgical disorders would naturally be admitted to a general hospital for their acute ailments. Dr. Sinclair hoped that the time would soon come when tuberculosis institutions would be equipped to handle the surgical emergencies occurring in the tuberculous. The danger to the nurses he said was not in caring for known cases of tuberculosis but in nursing patients whose tuberculosis had not been discovered. Dr. Lederman said that when a doctor suspected tuberculosis in a patient he wished to admit, he should notify the hospital of his suspicion. Dr. Sinclair said that in every case where there was the slightest suspicion the chest should be promptly X-rayed and the sputum examined. These precautions would reduce the danger of having unrecognized cases of tuberculosis on the wards.

There was some discussion of B.C.G. and streptomycin. Dr. Sinclair said that B.C.G. when

effective gave results for about three years. Regarding streptomycin he said that the reports were exceedingly encouraging but he had had no personal experience with it.

Winnipeg General Hospital

Hemangioma of the Liver — Dr. Charles Hunter

A retired farmer of 64 years came complaining of having three different attacks of epigastric pain—the first in the summer, the second in October, the last on January 7th. The pain was severe, began in the epigastrium, then passed to the left. There was no relation to food, it lasted a few hours, then disappeared. His appetite remains good, he can eat anything, and there has been no loss of weight.

Past Illnesses

1926, passed a urinary calculus.

1943, suddenly developed right hemiparesis with some numbness persisting in the right hand. Since 1943, nocturia xl or 3.

Physical Examination

Heart and lungs normal. Blood pressure 140/90. Left kidney possibly low.

Liver, felt extending just below costal margin, firm with irregular left lobe.

Blood examination, r.b.c. 3.4 million.

Hbg. 69%.

Wbc. 90,000.

Urinalysis, few rbcs. on two occasions.

Gastric analysis, normal.

X-Ray

Gastro-intestinal series, normal.

Cholecystogram, normal.

K.U.B., normal except for dense shadows in liver area.

Intravenous pyelogram, dilatation of left pelvis.

Comment by Dr. MacPherson: Areas of calcification in the liver may be due to:

(1) Calcification of primary or secondary carcinoma (rarely).

(2) Calcification of hydatid cyst.

(3) Calcification of hemangioma, as in this case calcium radiates out from the centre, as it does in hemangiomata of bone (Cf. Am. J. Radiology, March, 1945).

Five Cases of Congenital Heart Disease

Drs. Nicholson and F. Burgoyne

Congenital heart disease is discovered at autopsy in over 1% of cases (½% in cases over five years). Its incidence in cardiac clinics is about 6% (adults) and over 10% (children). Cause is little understood but among those suggested are fetal endocarditis, defects in the germ plasm, and consanguinity. The complications are Sub-

acute Bacterial Endocarditis, embolism, and pneumonia.

The cases presented were discovered at autopsy at the General Hospital within the past six months. In each instance Dr. Burgoyne gave a review of the history, showed the pathological specimen and kodachromes of the fresh heart, then outlined the embryological factors concerned, illustrating with sketches.

(1) **Patent-Foramen Ovale**—A woman of forty-four developed left-sided hemiplegia and died shortly thereafter. A large patent foramen ovale was found between the two atria. This was felt to be due to the fact that the septum primum had, in the first few weeks of intrauterine life, atrophied to a greater extent than normal.

(2) **Cor Biloculare**—A stillborn eight-month foetus showed complete failure in development of the ventricular septum. Other anomalies were herniation of the abdominal viscera into the left pleural space, and an extra digit.

(3) **Transposition of the Great Vessels**—A female baby, blue at birth, was discharged from hospital at twelve days with no audible murmur. At fifteen days a loud systolic murmur could be heard to the left of the sternum. Death occurred at seven weeks. This defect is due to failure of rotation of the developing great vessels so that the aorta comes off the right ventricle, and the pulmonary artery the left. Life was maintained briefly because of the presence of a patent ductus arteriosus, which made it possible for some oxygenated blood to escape to the general circulation.

(4) **Coarctation with Aneurysm of the Ascending Aorta**—A nineteen-year-old girl, previously well, collapsed while paddling a canoe, and died in a few minutes. The pericardial sac was found distended with blood, which had escaped through a rent in a 6 cm. fusiform swelling of the ascending aorta. A slight narrowing was found in the aorta just proximal to the origin of the innominate artery.

(5) **Aneurysm of Right Pulmonary Artery**—A woman of 44 years, with a history of having had several blue spells, died in congestive heart failure. A large saccular aneurysm of the right pulmonary artery, full of laminated clot, and patent ductus arteriosus, were found.

Professor Thomson: The importance of shunt resulting from congenital heart defects depends on the relative pressure on both sides. Only "venous-arterial" shunt is of serious significance. An "arterio-venous" shunt may cause some trouble through increased load on the venous side.

Dr. Allison drew attention to recent studies regarding the ill-effect of Rubella in the mother.

in the first trimester, on the developing fetal heart. He also stressed that diagnosis is now more important from a therapeutic standpoint since Gross began, in 1939, ligating the ductus arteriosus, and Blalock developed a successful procedure for overcoming the ill-effects of pulmonary stenosis.

February 7th, 1946:

1. Report on a recent trip to Medical Centres in Eastern Canada and a meeting of the National Research Council—Dr. H. V. Rice (to appear in an early issue).

2. A Case of Interscapulathoracic Amputation for Osteogenic Sarcoma—Dr. Elmer James

This operation is disfiguring and debilitating, as it involves removal of arm and scapula, but there is no doubt that there are times when such radical surgery is justified. A brief summary of the history of the operation was given. The first reported case was in 1737, when a miller accidentally lost his arm in this way. In 1836 the procedure was done for the first time in America. From then until 1881 there are twenty-nine cases reported in the literature with a mortality of 38%. In 1887, Berger described his procedure which is still used. By 1900, 145 cases had been reported, with a mortality of 12%. In 1942, 180 more cases had been reported, the mortality being 5%. By 1942, Pack of Memorial Hospital, New York City, had performed 31 such operations with no deaths.

The patient is a 55-year-old laborer who struck his elbow in 1944. When seen in June, he had pain and tenderness about the right lateral epicondyle, with no X-ray change, the impression then was that this was an epicondylitis. Two months later there was more pain and a tender swelling between the head of the radius and the ulna, resembling an abscess. At operation, a localized tumor, $\frac{3}{4}$ inches in diameter, was discovered which proved to be a sarcoma. A mid-humeral amputation was advised but refused in spite of similar advice given at the Mayo Clinic. By January, the pain was so severe that the patient agreed to have high amputation. Although it was fifteen months after the first operation, there was no evidence of metastasis. The radical procedure was considered advisable by the pathological department, and it was carried out about the middle of January. There was little shock, and the patient was out of bed on the second day, his pain relieved.

The chief drawback to the procedure is the disfigurement, but it is not much greater than that from a disarticulation. A high transhumeral amputation would leave a stump of little value to a laborer. The wound from a disarticulation is much more gaping, and much slower to heal.

Indications for the Operation

(1) Infections about the shoulder (osteomyelitis and tuberculosis not healing).

(2) Malignant tumors about the shoulder and arm (if metastases present, pain is relieved).

(3) Benign tumors of the scapula (chondromata) if of large size.

Dr. Penner: The specimen is a fibrosarcoma $8 \times 4 \times 2$ cm., arising from the periosteum, with invasion to the medulla of the ulna. Microscopic section showed three mitotic figures in one field. From a study of the records of the Winnipeg General Hospital tumor clinic for the past twenty years, it was discovered that there had been no cures reported for fibrosarcoma, and only five or six five-year cures for osteogenic sarcoma, these mainly because of radical surgery. Hence the recommendation for early radical surgery in both types of sarcoma.

W. G.

Post-Graduate Course Cancelled

The Post-Graduate Course Committee of the Faculty of Medicine, University of Manitoba, regrets that the refresher course announced for April, 1946, cannot be held at that time, because of an insufficient number of applications. However, a course of six weeks' duration for Medical Officers discharged from the Services will be given in May if an adequate number of applications are received before April 4th. Civilian practitioners may also apply and will be enrolled if there are vacancies in the course. The numbers will be limited to 15. The fee will be \$12.50 per week, payable from the student's rehabilitation grant. Application should be made to the Secretary of the Post-Graduate Committee, Dean's Office, Medical College, Winnipeg.

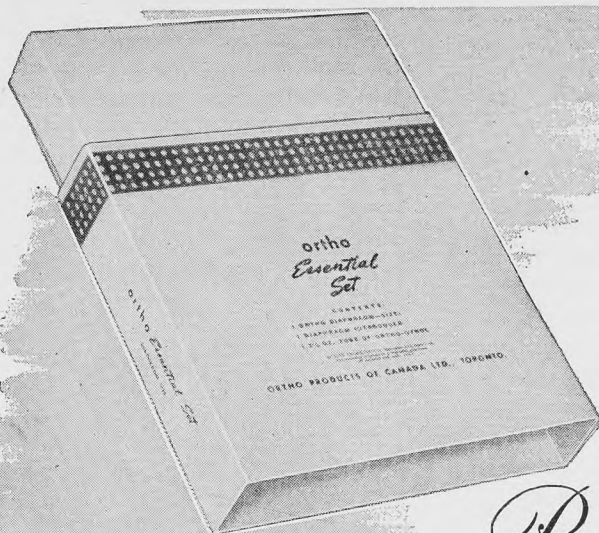
Announcement

A Postgraduate Course in Diseases of the Chest

will be given under the auspices of the Illinois Chapter of the American College of Chest Physicians at Michael Reese Hospital, Chicago, Illinois, during the week April 1st to 6th, inclusive.

Doctors may elect to follow this week's formal course with practical instruction in the field of thoracic surgery, bronchoscopy, pneumothorax, bronchography, and other methods and technics in the diagnosis and treatment of pulmonary disease.

Further information may be secured at the office of the American College of Chest Physicians, 500 North Dearborn Street, Chicago 10, Illinois.



Preferred by Physicians

... The convenient way of prescribing the patient's complete requirements when the diaphragm-jelly method is indicated.

The one package contains all the essential items ... (R_x package Ortho-Gynol with removable label; Ortho Diaphragm; Universal type Introducer). The Ortho Essential Set can be prescribed with absolute assurance that the items it contains are the result of years of laboratory and clinical research, and meet with every requirement of medical science.

**ORTHO
PHARMACEUTICAL
CORPORATION
(CANADA) LIMITED
TORONTO**



Winnipeg Medical Society—Notice Board

A. M. Goodwin, *President*

W. F. Tisdale, *Vice-Pres.*

Next Meeting

March 15th

C. K. Bleeks, *Treasurer*

R. A. MacPherson, *Secretary*

The original purpose of this page was to give publicity to our Society. During the past few months, however, it has contained very little that could be called Society News. In part this is due to the fact that circumstances have prevented me from keeping my usual vigilant eye on what is afoot, and no one has come forward to make up for my deficiencies. However, in an effort to make amends I mean to devote this issue to its proper subject.

It will interest the members to know the names of those appointed by the President to work as Committees. First there is the Programme Committee. This is under the chairmanship of Dr. E. S. James, who has for his assistants Dr. Burrell and Dr. Harry Medovy. I asked Dr. James early in the session to give me timely notice of the programmes for each month but difficulties so beset him on all sides that he could not give us the details in time for publication. However he and his colleagues always managed to put on a good show. The Membership Committee has had the easiest time. It is composed of Drs. Edmison, Cameron, Dyma, Walton, C. B. Stewart, Guttman and McGibbon. Thus there were many hands to make the work light and furthermore the returned men required little coaxing to bring them in to the fold. In all 57 new members have been enrolled this year. Our aim, of course, is to have every member of the profession a member also of the Society. Not only does this union give strength but it makes for mutual understanding and co-operative action. There is such a great tendency for doctors to fall into groups—especially hospital groups—that the part sometimes looks larger than the whole. The Society stresses the wholeness of the profession.

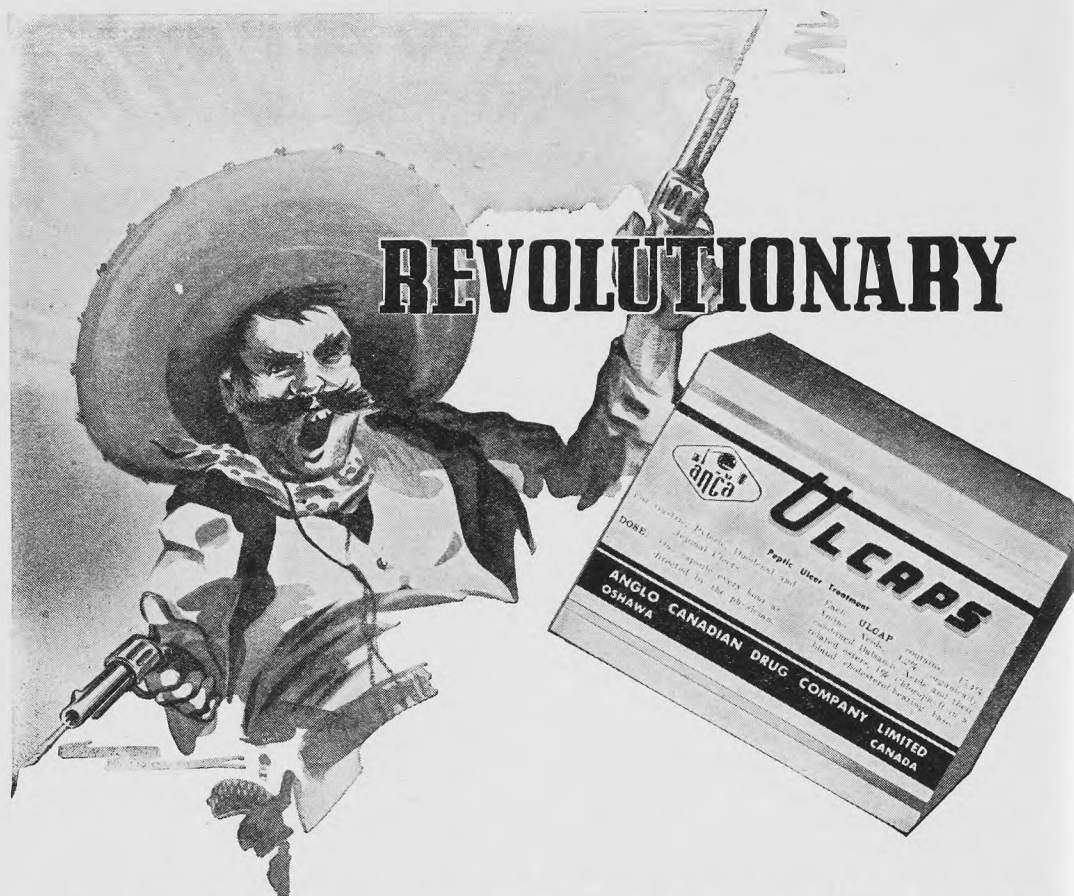
There is, however, a disadvantage in having many members and good programmes for that encourages large attendance and large attendance is not without its dangers to the audience. How it is at the moment I am not sure but usually on meeting nights the Physiology Theatre is about the most unphysiological spot in town. With every available space filled up and with every

one practicing oral eroticism by the use of some smoke-producing device there is little wonder that those in the back seats hear rather than see what is going on. And when to the dense pall of smoke there is added the heat of many persons and many radiators only flames are lacking to make a scene fit for the pen of Dante.

The Legislative Committee is made up of Drs. Ross Cooper, D. C. Aikenhead and J. M. McEachern. Ordinarily this committee has nothing else to do but draw its salary—which does not increase its labours—but occasionally its duties are most important. Whether or not there has been any recent tackling of the local legislators I do not know but in time we shall find out. Dr. McEachern is also the complete Vigilant Committee. In this role he scurries about with his ear to the ground and his eye cocked for the detection of any skullduggery who are meditating skullduggery with our innocent selves as victims. The Public Health Committee flourishes under the chairmanship of Dr. A. W. Hogg, with Drs. MacDougall, Robinson and E. W. Stewart as the other members. Last year, I remember, the principal worry of this committee was what to do about numerous young ladies who had become mothers without going through the usual and socially acceptable procedure of becoming wives, and who sought to unburden themselves by loading their unlawfully begot youngsters upon the City Fathers—the children, apparently, having none of their own. This leads naturally to the Committee on Economics, of which Dr. F. D. McKenty is chairman. These, then, are the gentlemen (no ladies this year) who look after your interests in the Council of the Society.

It is nice to see so many old friends back at their old haunts and all looking well. One of the latest to arrive is newly-wed George Evoy. Apart from having lost in spareness and gained in colour he is the same old George—the paragon of sartorial perfection, “the glass of fashion and the mold of form.” There is a rumor that George gets his ideas from “Esquire,” but that is quite wrong: “Esquire” gets its ideas from George.

J. C. H.



AFTER DECADES OF ANTACID THERAPY

AMINO ACIDS!

PLUS HEALING ACIDS!

PLUS PROTECTANT ACIDS!

ULCAP THERAPY presents a definitely revolutionary

ACID TREATMENT FOR PEPTIC ULCER

Hundreds of case histories recorded during the past few years displayed:—

- Ulcer Crater healed in 2 to 6 weeks 89%
- Cases Asymptomatic following first Uicap 20%

NOT ONE PATIENT WAS HOSPITALIZED

Treatment:—One Uicap hourly while awake.

Please write for further information.



Anglo·**CANADIAN**
DRUG  *Company*
 LIMITED



OSHAWA CANADA
 MANUFACTURERS OF FINE PHARMACEUTICALS

Western Depots: 236 Edmonton Street, 209 Boyd Building, National Drugs Ltd.

Anaesthetic Section

P. C. Lund, M.D., Chief Anaesthetist, Deer Lodge Hospital

Abstract

Intravenous Procaine Analgesia

F. M. Allen, M.D., Lyman Weeks Crossman, M.D., F.A.C.S., and L. Vosburgh Lyons, M.D., New York, N.Y. *Anesth. & Analg.*, Jan., 1946.

They point out that the abnormally increased capillary permeability in injured regions has long been familiar, especially in studies of shock. Experimentally large intravenous injections of either plasma or salt solution resulted in huge fluid accumulations in the injured parts, but not elsewhere, in animals with traumatic shock; and no comparable exudation was caused by such injections in animals with hemorrhagic shock. These observations led Allen to take an early position against the then prevailing theory of generalized increase of capillary permeability in shock. Investigators have since this confirmed the special permeability in traumatized tissues by injection of identifiable substances, such as foreign protein or radio-active compounds.

Permeability is evidently a dominant factor in the distribution of any substances in the body. The increased permeability of injured or inflamed tissues presumably accounts for the specially high concentration of drugs, such as salicylates, in such tissues as observed by pharmacologists. In this connection attention was attracted by Lundy who relieved pruritis in several jaundiced patients by intravenous injection of 20 cc. of 0.1% procaine solution, or by infusing slowly 1 gm. procaine in 1 litre of physiological saline solution. The relief continued for about four hours after the injection. The skin irritation is accompanied by increased permeability of capillaries which allows the circulating procaine to diffuse out particularly in these areas and anesthetize the nerve endings in the tissues. Gordon administered procaine intravenously to ten burned patients, obtaining analgesia of the burned areas, but not of other parts, unless these also become edematous. The analgesia lasted up to six hours, and the degree was sufficient to permit changing of dressings comfortably. In ten surgical cases, McLachlin found intravenous procaine infusions superior to morphine for control of post-operative pain. These reports conformed to the theoretical expectation; namely, relief of pain by transudation of procaine in areas where capillary permeability is increased in connection with injury, inflammation or edema, especially when the procaine is administered with considerable fluid intravenously.

Lundy's procedure consists in dissolving 1 gm. of procaine in 500 or 1,000 cc. of saline solution

and administering it by intravenous drip in one to one and one-half hours. Pain is relieved soon during the injection and lasts about four to five hours. McLachlin points out that, if a rare idiosyncrasy to procaine should give rise to toxic symptoms, these may be of two types: A nervous convulsive type which can be relieved by intravenous injection of a barbiturate; and a respiratory asthmatic type which can be controlled by 1/1,000 epinephrine subcutaneously. A skin test for sensitiveness is done in every case and the intravenous procaine solution is always begun slowly and since procaine is destroyed in the liver within ten minutes, danger from this procedure is practically negligible.

Their practical purpose was to try the intravenous procaine administration in the widest possible variety of painful conditions with the expectation that it might fail in states of fibrosis or vascular impermeability from any cause but since the great majority of pains are associated with local inflammation or edema the procaine diffusing through specially permeable capillaries should produce analgesia of nerves in those tissues, without important effects elsewhere in the body.

They describe their procedure by four illustrative cases:

(1) A man with an acute nucleus pulposus having acute pain and spasm—which was completely relieved by a solution of 1 gm. of procaine in 500 cc. saline infused by vein, at first slowly to watch for sensitiveness, then at increased rates up to 20 cc. per minute until the limit of tolerance (slight dizziness) was reached.

(2) An old woman with a large bed sore and osteo-myelitis of the lumbar spines. She was in constant pain and disturbed the rest of the ward unless kept asleep with large doses of morphine. A solution of four gms. of procaine in a litre of 5% glucose solution was infused over a period of twelve hours keeping her quiet throughout this period.

(3) A patient with arteriosclerotic gangrene of the toes and a painful foot. An infusion of 1 gm. procaine in 500 cc. saline was given in the course of one hour producing relief of pain for three hours.

(4) A woman with angina subject to almost continuous cardiac pain and frequent severe exacerbations daily. Some palliation was obtainable with morphine but doses high enough for real relief caused a psychoses. Four gms. procaine in 1 litre of 5% glucose solution was infused slowly over a period of ten hours causing fair relief of a severe paroxysm in a few minutes and enabled the patient to sleep the next night.

The day-long injection of 4 gms. to 8 or 10 gms. of procaine was repeated 25 times in 40 days without any sign of good or bad after-effects.

They also summarized two records of a new form of general anesthesia produced by rapid infusion of procaine in higher dosage. There has, however, not yet been sufficient experimental work done to define accurately the uses, limitations or possible dangers of this form of anesthesia.

In conclusion, it is stated that "intravenous procaine infusions within the limits set by dizziness and other subjective symptoms, can relieve many forms of pain in an effective, prolonged and safe manner."

P. C. Lund, M.D.

Abstract

F. F. Yonkman

The Actions of Demerol and Morphine on Gastro-Intestinal Musculature, Anesth. & Analg., September, 1944.

A new morphine substitute known as demerol does not act as a "bowel splint" as does morphine. In the human gastro-intestinal tract it may either depress or arrest motility, and also exert a spasmolytic action on the tonic smooth muscle. Demerol may lyse or neutralize morphine spasm, but it does not prevent its spasmogenic action. Demerol, therefore, is similar to morphine in its central analgesic action although not quite as potent. It differs from morphine in producing a spasmolytic rather than a spasmogenic effect.

P. C. L.

Anesthesiology

The dear old lady gave a vigorous pull at the doctor's door bell. Sue, his six-year-old daughter, answered. "My father is out giving an anesthetic." "That's a big word, my dear. What does it mean?" "It means ten dollars to daddy," was the quick reply of Sue.

A century has passed since the first inhalation anesthetic was given—ether in 1846 and chloroform in 1847. G. B. Shaw, in "Credulity and Chloroform," berates the doctor for pocketing his anesthetic fee, leaving the house before the patient recovers consciousness. The inference is that the patient would never again allow his credulity to be violated by chloroform. One hundred years ago a doctor was not allowed to pass the portals of a gentleman's house. He must use the side or rear door that the tradesman used. About this time, the eldest son (heir to the title) took a university course and probably ended up in parliament. The son who was obviously unfitted for

the university, army or business was dedicated to the church. In times past the previously mentioned line of thought spilled over into medicine. The doctor who was unable to make a living in medicine or surgery was looked upon as a safe and reasonable person to administer an anesthetic.

Anesthesia disturbs physiological functions in which the effects are widely diffused. Pathological and biochemical changes may occur in tissues and blood as the end result of such interference. Pain-relieving drugs may stimulate or depress the autonomic nervous system, interfere with gaseous exchange in tissues or blood, or depress the metabolism. During the operation, derangement of secretion and absorption may occur that produces changes in electrolyte and fluid balance. Liver function may be depressed. Physiological functions are so closely integrated that no single one may be viewed individually, but a group must be considered as a whole.

There was a time when the anesthetist's main field of human anatomy was limited to ciliated epithelium (chin to chest). Now the anesthesiologist chooses any route to administer pain-relieving drugs or fluids that does not interfere with the operation. Before deciding upon an operation the surgeon is happy to consult with the anesthesiologist upon the surgical risk of the patient, the choice of an anesthetic agent. During the operation the surgeon concentrates upon his work, knowing well that a combination of anesthetic agents will bring his patient through the operation with a minimum of shock. Should signs of the latter appear on the surgical horizon prompt parenteral administration of fluid or blood will correct any tendency to surgical shock. Post-operatively, the anesthesiologist continues interest in his patient.

An anesthesiologist must have a wide understanding of physiology, biochemistry and anatomy. The successful correlation of these subjects applied to the relief of pain is a life work.

Rigid standards have been set up by the American Medical Association, and must be met in order to qualify as an anesthesiologist. The examiners find that many are called but few are chosen. It is interesting to note that anesthesiology is the thirteenth upon the list of specialties recognized by the A.M.A.

Anesthesiologists played an exacting and important part in all theatres of the world war. The veteran looks for continued aid in the re-establishment to civil life.

The technical administration of anesthesia and the variety of anesthetic agents is interesting. There are many problems to be solved in the relief of pain and offer a challenge to the most enquiring mind.

The Review breaks new ground in the introduction of an anesthesiology section. We hope that the material submitted will be interesting and stimulating to its readers. Who knows that in a

future article we may view an embryo Crawford Long, James Simpson or John Snow! Who knows?
D. C. A.

Something New

Penicillin Administration Via the Knee Joint

This rather unusual method of administration has the advantage of prolonging an effective blood concentration over a longer period than is possible by injection in any other way. W. R. Bagley has used this method in 80 cases. The patients ranged in age from 15 to 79 and their diseases included gangrenous gallbladders and pneumonia among others. Careful technique prevents damage to the joints which can be used alternately. The technique is to enter the knee joint, at the insertion of the patellar tendon, with a 23 calibre $1\frac{1}{2}$ " long needle. Through this is injected 2 cc. of 1% solution of novocaine. Through the same needle is then injected 1 cc. of sterile water in which are dissolved the required dose, 1,000,000 units more or less. The needle is then removed and ice packs applied to the knee for 8 to 10 hours. —South. Med. & Surg. 107:108.

Diphtheria Toxoid in Pertussis

There is a synergistic antigenic action in h. pertussis and diphtheria toxoid. This has been proven by animal experimentation. After exposure to pertussin 61 children were inoculated with alum-precipitated diphtheria toxoid. One injection was given each week for three weeks, the amount varying from 0.5 cc. for children under three months to 1.5 cc. to children over one year. Of the 61 children so treated 57 did not develop pertussis beyond having a slight cough for a few days. This slight attack is held to confer active immunity.—Am. Jour. Dis. Child. 69:5.

Papaine in Oesophageal Obstruction

Obstruction of the oesophagus by a bolus of meat is not uncommon, is very troublesome, and sometimes removal of the meat is difficult. S. R. Richardson reports a simple and satisfactory new treatment which employs the powerfully proteolytic enzyme papaine. It consists of having the patient sip a solution (5%) of papaine in a vehicle containing 10% alcohol. Each sip is retained for as long as possible. Patency of the oesophagus is established usually within an hour or two, depending upon the quantity of the solution that

can be sipped and the length of time it can be retained.—Ann. Otol. Rhin. R. 54:328.

Streptomycin—An Ideal Urinary Antiseptic

Streptomycin has shown itself to be effective against organisms—such as streptococcus faecalis and pseudomonas aeruginosa—which resist treatment by sulphonamides. A urinary concentration of up to 1,750 units per cc. follows daily oral dosage of 2 million units of streptomycin. A concentration of 100 units per cc. of urine destroyed common organisms in 24 hours (in vitro experiments). Concentration of 1,330 units per cc. destroyed in 1 hour the most resistant organisms. —Proc. Staff Meet. Mayo Clin. 20:357.

Penicillin an Oxytocic

The use of penicillin in the treatment of gonorrhoea and syphilis in the female is frequently associated with symptoms similar to those produced by that other mold ergot. Leavitt reports bleeding and/or cramps in 8 of 21 pregnant women. Two aborted. Of 25 other patients, also pregnant, receiving mepharsan and sulphathiazole two had slight cramps but no bleeding. Of non-pregnant women about 8% began to menstruate within 24 hours after the first dose of penicillin. This is at least twice the number that might be expected to menstruate on a given day.—Jour. Ven. Dis. Infor. 26:150.

Simple Treatment for Sebaceous Cyst

Better cosmetic results follow cautery of sebaceous cysts on the face, scalp, neck, etc. A sharp needle is inserted exactly in the middle of the top of the cyst where the contents are closest to the surface. The needle is just introduced into the cyst cavity and then to the holding forceps is applied the electrode. Whitening around the needle indicates a sufficient current. The resulting slough should be one-quarter to one-third of the diameter of the cyst. If the contents are firm they must be expressed, otherwise drainage is spontaneous. For cysts over 3 c.m. in diameter more than one puncture is necessary. Anaesthetization of the surrounding skin is desirable in nervous patients.—Danna, J. A., New Orleans, M.E.S.J. 98:5.

HPL

For the Preparation of
Penicillin Cream

'Eucerin' LM

Trade Mark

'EUCERIN' LM has been specially compounded for the preparation of Penicillin creams. It is stable under sterilisation and produces an elegant cream, neutral in reaction and non-irritant.

"... Recent experiments suggest that penicillin retains its activity better in a Eucerin type of base..."

"Advances in dispensing practice"
Chemists and Druggists, Sept. 15th, 1945.

'EUCERIN' LM

is available in 1-lb.
and 5-lb. tins

Made in Canada for

Herts Pharmaceuticals Ltd.
Welwyn Garden City
Herts, England

Trial sample and literature
on request

VANZANT & COMPANY
357 College Street
Toronto 2B, Ont.

Eighteenth Anniversary Issue of the Harofe Haivri

"The Hebrew Medical Journal"

The attention of the medical profession is directed to the appearance of Volume II, 1945, of "Harofe Haivri" (The Hebrew Medical Journal), a semi-annual bilingual publication edited by Dr. Moses Einhorn.

The contents of this journal are not confined to technical medical topics, but are divided into several sections covering a variety of related subjects, such as Medicine in the Bible and Talmud, Old Hebrew Medical Manuscripts, Palestine and Health, etc. In the medical section, the following subjects are discussed: "The Treatment of Heart Failures," by Harry Gold, M.D.; "The Anemias and Their Treatment in the Light of Recent Advances," by Gershon Ginzburg, M.D., and "The Child and His Mental Health," by Samuel J. Lipnitzsky, M.D.

Under the topic of Historical Medicine, Prof. Nahum Slushtz of Palestine, writes an interesting article on Isaac Ben A'mran, famous physician and philosopher, who lived in Keiruhan in the middle of the 18th century and served as court physician to Emir of Zaduth Alla.

In the section on Talmud and Medicine, Dr. M. Ben-Ami writes explanatory remarks on the medicine in the Bible; in addition, Dr. Z. Muntner discusses the social status of the physician in the Talmud.

Dr. Solomon R. Kagan offers an article of particular interest on the contribution of the pioneer physicians to the growth and development of the Zionist movement throughout the world. Since the Middle Ages the Jewish physician has exerted great influence on the communal life of Israel. They were not only the healers of the body and mind, but also leaders, statesmen and diplomats who fought for the rights and freedom of their brethren. The current issue discusses the contribution of the Russian and Palestinian physicians to the Zionist cause.

The book review section contains detailed reviews by Dr. A. Goldstein and Dr. L. Herbert of Dr. A. Sadovsky's book, "A Textbook on Obstetrics," in Hebrew, published by the Hadassah Medical Organization.

The contents of Harofe Haivri are available to every reader, for there are complete English summaries of all the original articles. Those who desire information or who wish to subscribe may communicate with "The Hebrew Medical Journal," 983 Park Avenue, New York 28, N.Y.



The poets did well to conjoin music and medicine, because the office of medicine is but to tune the curious harp of man's body.—Bacon.

Editorial

J. C. Hossack, M.D., C.M. (Man.), Editor

Professor Wintrobe

We are very glad to have the opportunity of publishing a paper by Professor Wintrobe. He is one of the most distinguished alumni of our College and is internationally recognized as an authority on haematology. That he should find time in his very busy days to remember us is gratifying, and his article will be appreciated even more by those who know him than by those who merely know of him.

Minutes of the C. P. & S. Council

This is the second issue in which we have published the minutes of the C. P. & S. Further instalments will appear until they are up-to-date. Then they will be printed in the issue next after the meeting they concern. It is to be hoped that our other suggestion will also find favour with the Council. The suggestion was that there should be a public meeting of the College at the time of the annual Convention of the Association. This would seem to be particularly desirable this year because this is election year.

Minutes of the M.M.A. Executive

The president of the Association, Dr. McNulty, plans to have published each month the minutes of the previous Executive Meeting. He feels that these are particularly critical times for the profession and that every member of the Association should be kept informed of all that is afoot. A meeting of the City members is being planned for the discussion of a fee schedule and a full report will be published in due course. But inasmuch as the rural members are just as greatly affected in every matter relating to practice the publication of the minutes will serve to keep them au fait with all that is being done by their Executive.

Anaesthetic Section

Dr. Lund, chief anesthetist at Deer Lodge Hospital, is responsible for the items appearing under this heading. He plans to furnish us each month with information relating to anaesthesia. This has become an increasingly important subject and both full-time as well as occasional anaesthetists will profit from Dr. Lund's contributions. Further, inasmuch as anaesthesia is a matter of more than passing interest to the surgeons, they also will find this section of interest.

The Circular File

Neither in prose nor in verse, so far as I am aware, has anyone addressed himself to that useful depository of the useless — the "circular file" or

waste-paper basket. Yet every day every doctor must mutely bless the inventor of this valuable convenience as he sweeps into it the daily quota of advertisements. If time is not too pressing the envelopes are opened, the blotters extracted and the rest flung, unlooked at, into the accommodating jaws of the c.f. Requests for samples, if they are stamped, are usually signed; not because of interest in the products but because everyone likes to get something for nothing. But if time does press everything is cast without ceremony into this grave of advertisers' hopes. Even the rescued blotters soon go to join their parent envelopes from whose wombs, we find, they have been untimely ripped, our blotter drawer being already in a state of regurgitation.

Now here is an interesting problem in psychology. The advertisers must surely know the fate that meets their literature. They must be exceedingly naive if they do not suspect that the chief beneficiaries of their samples are the druggists who will gladly exchange a package of cigarettes for a basket full of pills. Why, then, do the advertisers persist in what Shakespeare would refer to as "wasteful and ridiculous excess"? To be sure they do many people much good. The lumber-jacks, the paper-makers, the paper-sellers, the artists, the engravers, the stenographers, the Post Office Department and, not least, the Patriotic Salvage Corps smile at the assiduity, the enthusiasm and the optimism of believers in "direct advertising." The only persons concerned who derive little and no tangible benefit are the advertisers themselves who fail to realise that "direct" actually means "direct to the waste-paper basket."

On the other hand, it is possible that the advertisers quite realize this and are, in fact, indulging in a quaint form of amusement, laughing up their sleeves when they think of what the doctor is missing; in which case, bless their little hearts, why not let them have their fun? Again, they may wish to show their patriotism in the most altruistic way possible by first of all fattening the purses of many people and then swelling the hungry sacks of the Patriotic Salvage Corps.

Now I have two suggestions to make which would accomplish all this good and, at the same time, save the doctors a spot of bother. Suggestion one is for the advertisers to mail their advertising to themselves or to each other and to fill their own waste-paper baskets. The second, and, I think, the better, is for them to mail it direct to their local Patriotic Salvage Corps. Regarding samples, too, I have a bright idea which would

find favour at least with the doctors. I suggest the manufacturers write us thus: "Dear Doctor, We estimate the trade-in value of our samples of B.O. Elixir at 2 packages of cigarettes. We are, therefore, sending you the cigarettes and keeping the samples. However, doctor, you will remember that smoking makes one think like a

sage and act like a Samaritan. Under these circumstances, you will naturally prescribe our B.O. Elixir (for terribly tired toilers), and don't forget, doctor, 'B.O. Elixir will make **you** briskeer. Try it sometime. Meanwhile our regards and good smoking." This sort of thing would go very well. What do you think?

Obituaries

Dr. William Rogers

Dr. William Rogers, well remembered as a teacher of clinical medicine and for many years physician at the Royal Alexandra Hotel, Winnipeg, died on February 2 after a long illness. Born at Lakefield, Quebec, in 1866, he graduated in Arts and Medicine (1892) from McGill University, and came to Manitoba soon after graduation. He practised at Melita, then came to Winnipeg about ten years later.

He served on the honorary attending staff of the Winnipeg General Hospital from 1904 to 1927, when he was appointed to the consulting staff. In the Manitoba Medical School he lectured for seven years on Medical Jurisprudence and for fifteen years on Clinical Medicine. In 1929 he was appointed Professor Emeritus of Medicine. He was active in the Medical Council of Canada and was President in 1929-30.

He was a brother of the late Hon. Robert Rogers, a former Minister of the Interior. Wise, urbane, and rich in saving common sense, he won the respect of his confreres and the admiration of his students.

Dr. Angus Allan Murray

Dr. Angus Allan Murray died on February 9, at the Winnipeg General Hospital. Born at Lower Mount Thom, Pictou County, N.S., he was educated in Pictou Academy and taught school in Nova Scotia before coming to the west. He graduated from the Faculty of Medicine, University of Manitoba, in 1913, and received the C.M. degree in 1922. Later he became a Fellow of the American College of Surgeons and a Fellow of the Royal College of Surgeons of Canada.

For four years after leaving Winnipeg General Hospital he practised orthopedics with the late Dr. H. P. H. Galloway. On the institution of the Shriners' Hospital for Crippled Children in Winnipeg he became Orthopedic Surgeon. From 1920 to 1935 he lectured in Orthopedic Surgery in the Medical school. In 1926 he travelled through Saskatchewan as a lecturer under the C.M.A. Post-graduate scheme.

Two sons and a daughter survive him. Intensely devoted to his work, he had a warm heart for the crippled and afflicted, especially children.

Dr. W. Russell Gorrell

Dr. W. Russell Gorrell, provincial coroner since 1942, died suddenly at his home in Winnipeg on February 8. Born in Pilot Mound, Man., he was employed by the J. I. Case Threshing Machine Company for four years. He graduated in medicine from the University of Manitoba in 1915 and practised for twelve years in Minnedosa before coming to Winnipeg. For some time he acted as deputy coroner, and on the retirement of Dr. H. M. Speechly succeeded him as coroner. In this position he rendered excellent service. He held the rank of Major in the R.C.A.M.C. (reserve). Dr. Gorrell was keenly interested in music and curling and was a past president of the Granite Curling Club. He is survived by his widow and a sister and five brothers, one of whom is Dr. J. A. Gorrell of Vancouver.

Dr. John Daniel McEachern

Dr. John Daniel McEachern died February 1 at Misericordia Hospital after a long illness. Born in Newport, Prince Edward Island, in 1883, he attended St. Dunstan's College in Charlottetown, then came west in 1904. Before entering the study of medicine, he taught school for two years. In 1912 he graduated from Manitoba Medical College and later took post-graduate work in New York and Paris. In his practice in Winnipeg he was known as an expert surgeon, possessed of good judgment. He became chief of surgery both at Misericordia and the Children's Hospital and was consultant surgeon to the City hospitals, King George and King Edward. He was assistant professor of surgery in the Faculty of Medicine, University of Manitoba, until ill-health caused his retirement in 1941.

Honors came to him. He was Past President and Honorary Life Member of the Winnipeg Medical Society, a Past Honorary President of the Manitoba Medical Students' Association and a Fellow of the American College of Surgeons.

He is survived by his widow and a son and daughter.

Providence has given us hope and sleep as compensation for the many cares of life.—Voltaire

Book Review

The Effect of Smallpox on the Destiny of the Amerindian. By E. Wagner Stern, Ph.D., and Allen E. Stern, Ph.D. 153 pages. Boston: Bruce Humphries, Inc. In Canada: The Ryerson Press, Toronto. \$3.75.

The destiny of nations and the fate of peoples has many times been profoundly influenced by disease. We have no certain knowledge as to how the dawn of civilization was delayed or its course affected by epidemic diseases, but germs are as old as, if not older than, the human race and great indeed must have been the part they played in every stage of cultural development. If, however, we have no sure information about the effects of plagues on our own primitive ancestors we have abundant evidence of their ravages when introduced among native races. The American Indians were overcome by smallpox far more than by lead and steel. The latter they could and did face with courage and intelligence. The former crushed alike their spirit and their power of resistance. Smallpox quickly reduced the native population of the West Indies to a fraction of its former number. Upon the mainland there was almost equal destruction. It is estimated that there were nearly 4,000,000 natives in Mexico at the time of the Spanish invasion. Another million and a quarter were spread over the rest of the continent. In 1519 a negro slave suffering from smallpox was landed on the Mexican Coast. The disease soon found its way among the tribes and everywhere the mortality was high, in some instances over 90%. Thereafter epidemics were frequent and severe as the more remote tribes became affected. By the end of the 16th century smallpox was known and feared from the shores of Hudson Bay to the Coast of Brazil and far south of the equator along the west coast of South America.

This book is a careful study of the effects wrought by smallpox upon the Indians of the Americas. It begins with the arrival of the Spaniards and follows the history of the disease and of the Indians century by century recounting the decimation of some tribes and the annihilation of others. It tells of the early attempts at control and how they succeeded. It points out, also, that the sole defence we have against this ancient enemy is vaccination—a procedure which still has its active opponents. This book will, of course, appeal especially to those who are interested in epidemiology and in the fate of native races but it can very profitably be read by every one connected with medical practice. It reminds us in a very forceful way of the lethal potency of a disease which we are inclined to ignore but which is very far from being extinct. It is a strictly

accurate presentation with an extensive bibliography which supports the many facts and figures given by the authors.

J. C. H.

Amputation Prosthesis. By Atha Thomas, M.D., and Chester Haddan. 205 pages. Generously illustrated. Montreal, J. B. Lippincott Company. Price \$10.00.

This book should be of great value to every surgeon who handles amputations. The fact that the patient's comfort and usefulness depend largely on the prosthesis he will have to wear is stressed. The proper preparation of the stump is of great importance and the authors point out the advantages of certain amputation sites and the disadvantages of others, particularly as regards the prosthesis. There is full discussion of the anatomical and physiological considerations necessary in the adapting of a prosthesis so as to make a good stump into a useful limb. The care of the stump is well described. Various types of apparatus are considered in detail. The type best suited to each amputation, the mechanics of each, the methods of fitting and alignment are matters dealt with for the guidance of the surgeon and for his information as to what he can expect from the limb maker. Upper arm prosthesis and the limitations of cine-plastic operations are well presented. "Rehabilitation of the Amputee" is the heading of a timely chapter which discusses the situation as it affects both the veteran and the civilian. The book is co-authored by a surgeon and a limb maker which gives it a special value. On the whole it is an excellent presentation which is generously illustrated.

H. Funk.

Psychological Medicine: A short introduction to psychiatry by Desmond Curran, M.B., F.R.C.P., D.P.M., and Eric Guttman, M.D., M.R.C.P., with a foreword by J. J. Conybeare. Second Edition. 246 pages, 20 illustrations. Edinburgh, E. & S. Livingstone. Published in Canada by Macmillan Company of Canada. \$3.00.

The requirements of modern practice demand that every doctor have some knowledge of psychological medicine. It is not expected of him that he become highly skilled in this branch but he is expected to have a greater familiarity than was common a few years ago. There are many practitioners who realize this but who find the standard text books confusing rather than helpful and too large for their needs. For such doctors the present volume should prove very useful. It is not large

(246 pages), is very clearly written and perfectly fulfills its purpose of furnishing a short introduction to this important subject. It discusses etiology from the mental, physical and constitutional standpoints. It next considers symptoms first individually and then as grouped into clinical pictures. Instruction is given in the taking of histories and a chapter is devoted to treatment. Adequate space is given to the consideration of the principal groups of psychological disorders, i.e., constitutional anomalies, organic syndromes, the affective reaction types and schizophrenia. There is a valuable chapter on the psychiatric aspects of head injury, and another on drug addictions. Consideration of obsessional states, hysterical reaction

and the legal aspects of mental illness complete the main part of the text. An appendix of four chapters discusses the various aspects of psychiatry associated with war conditions. There is a full index.

At the rate of two chapters a day the reader can, in a little over a week, absorb a useful knowledge of the subject even if he has no previous grounding in it. For those who wish to pursue the subject further there is a list of more advanced works, the reading of which will be encouraged and will be made easier by Curran and Guttman's introduction. The presence of a second edition so soon after the first is proof of the favour it has won.

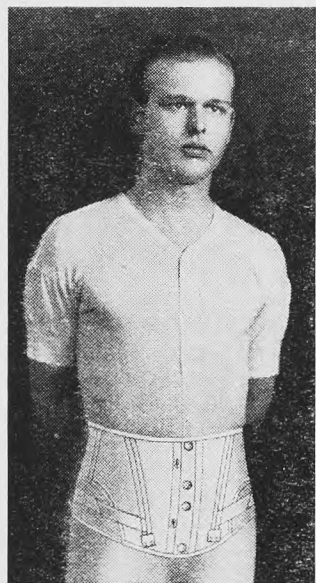
J. C. H.

Microfilm Service

Microfilms of journal articles may be obtained from the Army Medical Library Washington, D.C., U.S.A., for only the cost of the postage, if requested by the individual and free if through the library. The Army Medical Library considers the microfilm a substitute for Inter-Library loans, and prefers to send them instead of the journals. Their weekly publication, "Current List

of Medical Literature," is received in the library and contains a classified list of articles which have been filmed during the week. It is possible however, to procure a microfilm of any article in the Quarterly Cumulative Index Medicus though there might be some delay in obtaining material which has not already been filmed.

For further information about this service enquire at the medical library, telephone number 29 545.



Model 659

"FISHERMADE"

**HEALTH BELT
for Ptosis
and
good General
Support**

Constructed of white mesh material with elastic inserts at bottom of side sections over hips, eliminating cutting through the groin. Fastens up centre front.

Physicians
Prescribe as
'FISHERMADE'
Model 659

Made in Canada by

FISHER & BURPE, LTD.

219 KENNEDY STREET

WINNIPEG

Branches: EDMONTON and VANCOUVER

Buy an Income for Life

**Security
at Low
Cost . . .**

4%

**Compound
Interest**

Dominion Government Annuities are the soundest investment you can make. The income is greater than can be obtained from any other investment offering the same security. Your money accumulates at 4% compound interest. Your investment is backed by all the resources of Canada. Every dollar you invest goes into your own annuity. The Government absorbs all cost of administration.

For particulars write:

Mrs. E. L. Taylor, Representative

CANADIAN GOVERNMENT ANNUITIES

617 Royal Bank Building., Winnipeg, Man.

Personal Notes and Social News

Dr. and Mrs. F. A. MacNeill's second daughter, Irene, was married at Toronto on February 15th to Lieut. J. Drummond Grieve, of Toronto.

Dr. and Mrs. J. J. Burgouin are happy to announce the birth of a daughter (Louise Elaine) on February 1st, 1946, at St. Boniface Hospital.

Dr. R. F. M. Myers, recently demobilized from the R.C.A.M.C., has re-entered civilian practice as an associate of Dr. W. S. Peters, 15 Clement Block, Brandon

Dr. and Mrs. J. A. McNeill, of Gretna, Man., take pleasure in announcing the birth of a daughter (Alix Patricia) on January 26th, 1946, at St. Boniface Hospital.

Capt. S. M. Luginsky, after three and a half years service with the R.C.A.M.C., three years overseas, has re-entered civilian practice at Beausejour, Man.

Major C. H. Taylor, recently demobilized from the R.C.A.M.C., has re-entered civilian practice, with offices at 606 Boyd Building, Winnipeg.

Dr. J. Grof, formerly of Brandon, Man., is now practicing at 232 Garfield Street, Winnipeg.

Dr. Herbert Meltzer, recently demobilized from the R.C.A.M.C., is now Medical Director of the Dept. of National Health and Welfare, Edmonton, Alta.

Captain Sam Kobrinsky, formerly with the R.C.A.M.C., is now in civilian practice in association with his father, Dr. Sol Kobrinsky, 602 Medical Arts Building.

Major J. E. Burch, after six and one-half years' service in the R.C.A.M.C., five years overseas, has entered civilian practice as an associate at the Winnipeg Clinic.

Dr. M. H. Ivens (U. of M. '35), formerly attached to the United States Army Medical Corps, has entered civilian practice at Carberry, Man.

Dr. Mary Sokolofski, formerly of 206 Boyd Building, has left Winnipeg to reside in Chicago, Ill.

Dr. J. D. Leishman, recently demobilized from the R.C.A.M.C., has entered civilian practice, with offices at 400 Power Building.

Capt. E. H. Brotman, R.C.A.M.C., recently demobilized from the 2nd Manitoba Dragoons, has entered civilian practice at 1137 Portage Ave., Winnipeg.

Dr. M. T. Kobrinsky, after five years with the R.C.A.M.C., 21st Canadian General Hospital overseas, has been demobilized and is now associated with the Deer Lodge Military Hospital.

The horse and mule live 30 years,
And nothing know of Wines and Beers;
The goat and sheep at 20 die,
And never taste of Scotch and Rye.

The cow drinks water by the ton,
And at 18 is mostly done;
The dog at 15 cashes in
Without the aid of Rum and Gin.

The cat in milk and cream soaks,
And then in 12 short years it croaks;
The modest, sober, bone-dry hen
Lays eggs for nogs, then dies at ten.

All animals are strictly dry,
They sinless live and swiftly die;
But Sinful, Ginful, Rum-Soaked Men
Survive for three score years and ten.

The Writers in This Issue

Maxwell M. Wintrobe, M.D., Ph.D.,

Professor of Medicine, University of Utah.

C. B. Schoemperlen, M.D.

Gordon S. Fahrni, M.D., Ch.M., F.R.C.S. (C.), F.A.C.S.

Associate Professor of Surgery, University of Manitoba; Assistant Surgeon, Winnipeg General Hospital.



Unconditional Surrender *Every Time!*

There is no stalling or quibbling on the part of small children when a palatable, liquid preparation such as Vi-Daylin is given. Most children have difficulty in swallowing tablets or capsules while many others refuse to accept the older types of heavy emulsions and the less pleasant-tasting malt products. Vi-Daylin, therefore, is especially adapted to administering the daily vitamin supplements to infants and children. Vi-Daylin is a stable, homogenized mixture of vitamins A and D, thiamine hydrochloride, riboflavin, ascorbic acid, and nicotinamide. It contains only traces of alcohol (not more than 0.5 percent) and one teaspoonful, 5 cc., supplies at least *twice* the minimum daily requirements for infants of vitamins A and D and riboflavin, at least *three times* that of vitamin B₁, *four times* that of vitamin C, and more than the recommended daily allowance of nicotinamide. Vi-Daylin mixes readily with cereal, milk or juices but both children and adults enjoy its citrus-fruit flavor when it is given by spoon as it comes from the bottle. Vi-Daylin is carefully standardized for each of the contained vitamins. It is available through prescription pharmacies everywhere in 90-cc. bottles. ABBOTT LABORATORIES LIMITED, Montreal.

Vi-Daylin

(Homogenized mixture of vitamins A, D, B₁, B₂, C and Nicotinamide, Abbott)

Programme

Winnipeg Anaesthetist Society Meeting

Winnipeg, March 15th and 16th, 1946

The Winnipeg Anaesthetic Society is the sponsor of this two-day Meeting and they extend a cordial invitation to all members of the medical profession in the Western Provinces to attend. Dr. Ralph Knight of Minneapolis, Minn., will be the guest speaker.

Friday, March 15th

Morning

8.30 **Clinical Anaesthesia**, Deer Lodge Hospital and Winnipeg General Hospital.

Noon

12.30 **Luncheon**, Winnipeg General Hospital.

Afternoon

Guest Speaker: Dr. Ralph Knight, Minneapolis, Minn.

Cartoid Sinus, Dr. H. Rice.

Round Table:

Spinal Anaesthesia, Dr. H. C. Hutchison, Chairman.

Ether, Dr. Clive Neilson, Chairman.

Economics, Dr. B. E. Leech, Regina, Sask., Chairman.

Evening

8.00 At Winnipeg Medical Society Meeting. Modern Anaesthetic Agents, Dr. Ralph Knight.

Surgeon Anaesthetist Relationship, Dr. P. H. T. Thorlakson.

Saturday, March 16th

Morning

8.00 **Clinical Anaesthesia**, St. Boniface and Winnipeg General Hospitals.

Noon

Luncheon, St. Boniface Hospital (Outdoor Dept., entrance off Tache Ave.) Dr. Ralph Knight, Guest Speaker.

Afternoon

Rh Factor, Dr. Bruce Chown.

Round Table:

Cyclopropane and Curare,

Dr. Marjorie Bennett, Chairman.

Evening

6.00 **Cocktails**, Fort Garry Hotel.

7.00 **Dinner**, Fort Garry Hotel.

8.30 **Entertainment**, Ice Carnival.

Medical Happenings for March

Tuesday, 5—

Luncheon, Misericordia Hospital, 12:30 p.m.

Wednesday, 6—

Tumor Clinic, Winnipeg General Hospital, 9:00 a.m.

Thursday, 7—

Luncheon, Winnipeg General Hospital, 12:30 p.m.

Friday, 8—

Tumor Clinic, St. Boniface Hospital, 10:00 a.m.

Wednesday, 13—

Meeting, Council, Winnipeg Medical Society, 12:30 p.m.

Wednesday, 13—

Tumor Clinic, Winnipeg General Hospital, 9:00 a.m.

Thursday, 14—

Ward Rounds, Children's Hospital, 11:00 a.m.

Thursday, 14—

Luncheon, St. Boniface Hospital, 12:30 p.m.

Friday, 15—

Tumor Clinic, St. Boniface Hospital, 10:00 a.m.

Friday, 15—

Meeting, Winnipeg Medical Society, 8:15 p.m., Medical College.

Tuesday, 19—

Luncheon, Grace Hospital, 12:30 p.m.

Tuesday, 19—

Luncheon, St. Joseph's Hospital, 12:30 p.m.

Wednesday, 20—

Tumor Clinic, Winnipeg General Hospital, 9:00 a.m.

Thursday, 21—

Ward Rounds, Children's Hospital, 11:00 a.m.

Thursday, 21—

Luncheon, Winnipeg General Hospital, 12:30 p.m.

Friday, 22—

Tumor Clinic, St. Boniface Hospital, 10:00 a.m.

Friday, 22—

Luncheon, Victoria Hospital, 12:30 p.m.

Wednesday, 27—

Tumor Clinic, Winnipeg General Hospital, 9:00 a.m.

Thursday, 28—

Ward Rounds, Children's Hospital, 11:00 a.m.

Thursday, 28—

Luncheon, St. Boniface Hospital, 12:30 p.m.



DIGITALIS LANATA

CEDILANID

The "C" glycoside of Digitalis Lanata

Significance of a High Sugar Content

Owing to a protective process of extraction first introduced and exclusively employed by Sandoz, Cedilanid is isolated in the most potent initial form. This means it is identical in its structure with the glycoside which exists in the fresh *Digitalis lanata* plant. In this stage, the glycoside possesses the highest possible amount of carbohydrate per molecule. Stoll and his collaborators have shown that the hitherto best-known pure glycosides of *Digitalis purpurea* are products of degradation which have lost carbohydrates during the process of purification. The significance of the sugars in reference to cardiac activity was investigated by Rothin; Chen, Robbins and Worth; and Chen and Elderfield. According to Chen and Elderfield, "the sugar molecule or molecules when conjugated in nature with the aglucones definitely increase the cardiac activity of the latter, although they possess no such effect themselves.



PHARMACEUTICAL SPECIALITIES
Canadian Representative
The WINGATE CHEMICAL CO. LIMITED
MONTREAL



Department of Health and Public Welfare

Comparisons Communicable Diseases — Manitoba (Whites and Indians)

DISEASES	1945		1944	
	Dec. 30, '45 to Jan. 26, '46	Dec. 2 to Dec. 29, '45	Jan. 1 to Jan. 27, '45	Dec. 3 to Dec. 30, '44
Anterior Poliomyelitis	---	---	1	3
Chickenpox	147	254	266	243
Diphtheria	17	20	27	56
Diphtheria Carriers	1	3	8	7
Dysentery—Amoebic	1	---	---	---
Dysentery—Bacillary	---	---	1	3
Erysipelas	4	6	6	9
Encephalitis	---	---	---	---
Influenza	3	18	22	19
Measles	9	11	50	124
Measles—German	1	---	4	2
Meningococcal Meningitis	1	---	2	1
Mumps	111	83	68	38
Ophthalmia Neonatorum	---	---	---	---
Pneumonia—Lobar	3	9	13	18
Puerperal Fever	---	---	---	---
Scarlet Fever	40	75	59	88
Septic Sore Throat	3	4	1	1
Smallpox	---	---	---	---
Tetanus	---	---	---	---
Trachoma	---	---	---	---
Tuberculosis	15	78	12	95
Typhoid Fever	---	---	2	3
Typhoid Paratyphoid	---	---	---	1
Typhoid Carriers	---	---	---	---
Undulant Fever	1	---	1	---
Whooping Cough	17	55	37	36
Gonorrhoea	188	224	117	108
Syphilis	58	67	42	43
Diarrhoea and Enteritis, under 1 yr.	3	2	---	---

DEATHS FROM COMMUNICABLE DISEASE

December, 1945

DISEASES					
(White Cases Only)					
*Approximate population.	*726,000 Manitoba	*3,825,000 Ontario	*906,000 Saskatchewan	*2,972,000 Minnesota	*641,000 North Dakota
Anterior Poliomyelitis	---	1	1	---	---
Chickenpox	147	1,650	202	---	37
Diarrhoea and Enteritis, under one year	3	---	---	---	---
Diphtheria	17	54	---	24	10
Dysentery—Amoebic	1	2	---	7	---
Dysentery—Bacillary	---	1	---	1	---
Diphtheria Carriers	1	---	---	---	---
Erysipelas	4	4	---	---	2
Influenza	3	402	10	16	172
Jaundice—Infectious	---	23	---	---	---
Measles	9	4,504	28	22	3
Measles—German	1	110	3	---	---
Mumps	111	677	33	---	1
Pneumonia—Lobar	3	---	---	---	---
Scarlet Fever	40	295	16	194	39
Septic Sore Throat	3	2	---	---	1
Trachoma	---	---	---	---	2
Tuberculosis	15	192	19	9	16
Typhoid Fever	---	6	---	1	---
Undulant Fever	1	---	---	8	---
Whooping Cough	17	156	---	38	2
Gonorrhoea	188	651	---	---	72
Syphilis	58	461	---	---	34

Urban—Cancer, 42; Influenza, 2; Lethargic Encephalitis, 1; Pneumonia Lobar, 2; Pneumonia (other forms), 6; Puerperal Septicaemia, 1; Syphilis, 5; Tuberculosis, 5; Hodgkin's Disease, 3; Septicemia, 1; Diarrhoea and Enteritis (under 2 years), 5. Other deaths under 1 year, 26. Other deaths over 1 year, 201. Stillbirths, 15. Total, 242.

Rural—Cancer, 31; Influenza, 2; Pneumonia Lobar, 2; Pneumonia (other forms), 10; Syphilis, 1; Tuberculosis, 13; Septic Sore Throat, 1; Diarrhoea and Enteritis (under 2 years), 3. Other deaths under 1 year, 17. Other deaths over 1 year, 177. Stillbirths, 16. Total, 210.

Indians—Influenza, 1; Pneumonia Lobar, 1; Pneumonia (other forms), 11; Tuberculosis, 7; Diarrhoea and Enteritis (under 2 years), 1. Other deaths under 1 year, 8. Other deaths over 1 year, 10. Stillbirths, 1. Total, 19.



Dysentery, Amoebic—The one case reported is that of a returned soldier who, no doubt, received his infection overseas. He entered one of the rural hospitals and was diagnosed there. Quite a few of these cases are reported from Deer Lodge Hospital.

Erysipelas—A few sporadic cases are reported as usual.

Mumps show a slight increase but this is a cycle to be expected.

Incidence of almost all communicable diseases has been lower than the usual. Our greatest problems, as shown by statistics, are the prevention and control of venereal diseases, tuberculosis and diphtheria.

STAPHYLOCOCCUS TOXOID

FOR TREATMENT OF LOCALIZED STAPHYLOCOCCAL INFECTIONS

Staphylococcus Toxoid is a specific antigen recommended for use in the treatment and prevention of certain types of localized staphylococcal infections, such as boils, styes, pustular acne and recurrent migratory staphylococcal abscesses of soft tissues and bone. Staphylococcus toxoid may be administered in 8 subcutaneous doses at intervals of from five to seven days.

HOW SUPPLIED

Staphylococcus Toxoid is supplied by the Connaught Laboratories in a package containing a 2-cc. vial of diluted toxoid (Strength A) and a 2-cc. vial of undiluted toxoid (Strength B). Strength A is a 1-in-4 dilution of Strength B and is intended for use in the four initial doses. Together, the two vials contain sufficient material for the series of 8 injections.

CONVENIENCE IN ADMINISTRATION

Since the material in this package is ready for use without further dilution, it will be found convenient by the physician. Laboratory studies have demonstrated that the diluted toxoid in this package remains stable and potent.

CONNAUGHT LABORATORIES

University of Toronto

Toronto 5, Canada

Depot for Manitoba

BRATHWAITES LIMITED

431 Portage Avenue, Winnipeg

Requirements for a Good Provincial Venereal Disease Control Programme

Major Georges Leclerc

Acting Chief, Division of Venereal Disease Control, Department of National Health and Welfare

There are seven essential requirements for a good provincial venereal disease control programme.

The First Requirement is Adequate Professional Medical Personnel, Both in Number and Quality.

In the Canadian Army, there are, at present, nineteen medical officers employed in Canada on a full-time basis as venereal disease control officers. Until a few months ago, the Royal Canadian Air Force had seven venereal disease control officers and the Royal Canadian Navy had three officers, all employed on a full-time basis in Canada. As part of their rapid demobilization, the Air Force and the Navy recently discontinued their venereal disease control programmes, but the programme of the Canadian Army in Canada is being continued.

Venereal disease control in the civilian population of Canada is a provincial responsibility. There are today, in the various provincial departments of health across Canada, only six physicians employed on a full-time basis in venereal disease control and seven physicians employed on a part-time basis. Some of the men working on a part-time basis are giving less than one-third of their time to venereal disease control.

In the opinion of Dr. J. R. Heller, Director of the Venereal Disease Control Division of the United States Public Health Service, there should be one physician employed on a full-time basis for venereal disease control for each 500,000 of population. This has been a working rule followed by the United States Public Health Service for a number of years, and it has proven satisfactory. Accordingly, in Canada twenty-four physicians should be employed in venereal disease control on a full-time basis.

The Province of Manitoba, with a population of about 700,000, should have one venereal disease control physician, employed on a full-time basis, and perhaps another on a part-time basis. At the present time, there is only one part-time physician employed in venereal disease control in Manitoba.

The position of director of a provincial venereal disease control division is strictly an administrative-medical one. The director should not be required to do any clinical work in hospitals, or clinics, and should not be permitted to have a

private practice. He should be free to devote all of his time to the administration and organization of the provincial programme. The diagnosis and treatment of venereal diseases in hospitals and clinics should be the responsibility of consultants or physicians who could be employed on a part-time basis.

It is very important that the director be carefully selected. He must have administrative ability and adequate public health training. He must be a good public speaker in order to carry out the educational phase of his programme. He must have sufficient drive and initiative, as well as the type of personality required to deal effectively with public health officials. Venereal disease control is not only a health problem, but is also a welfare, moral and legal problem. Therefore, the director should be capable of enlisting the active support of the welfare, moral, and legal agencies.

The director would need a professional consultant, or consultants, employed on a part-time basis, to advise him on matters relating to the medical management of venereal diseases. He would also need to have an assistant in the field of epidemiology. This assistant does not necessarily need to be a physician. An experienced social worker could very well carry out this type of duty.

For the Province of Manitoba, an adequate personnel organization would be to have a Director of the Division of Venereal Disease Control, employed on a full-time basis, one non-medical epidemiologist, also employed on a full-time basis, and one, or more, medical consultants employed on a part-time basis.

Second Requirement: Provision for the Compulsory Notification of All Venereal Infections in a Communicable Form.

To deal effectively with the venereal disease problem, it would naturally be very useful to know what the problem really is. How many cases of venereal infections are occurring in the province every year? Is the incidence of venereal disease increasing, decreasing or remaining stationary? Unfortunately, these questions cannot be answered satisfactorily.

Because the reporting of venereal disease by private physicians is not complete, all available statistics on its incidence in the civilian population in Canada are totally unreliable. In this respect, the Province of Manitoba is not any

A resume of a presentation given before the Legislative Commission to Study the Venereal Disease Control Problem in the Province of Manitoba, given at Winnipeg on 13th December, 1945.

worse, nor any better, than the other provinces of Canada.

Prior to 1944, the machinery for collecting statistics on the incidence of venereal disease for Canada as a whole did not exist. Each province had a different notification form, using different nomenclatures. In some provinces, the notification of venereal diseases did not become compulsory until 1941.

At the National Venereal Disease Control Conference, held in Ottawa, December, 1943, a uniform national notification form for venereal infections was devised. This form has now been adopted by all provinces, with the exception of the Province of Quebec. Since September, 1944, all provinces have been submitting to the Dominion Bureau of Statistics a weekly report on the incidence of venereal disease. This will provide the means for the collection of comparable statistics on venereal disease for all provinces.

In co-operation with the Dominion Bureau of Statistics, Vital Statistics Branch, the Division of Venereal Disease Control of the Department of National Health and Welfare, has been attempting to compile whatever is available in the way of incomplete statistics for the various provinces since 1920. Most of the available statistics include only the number of patients reported by the clinics and hospitals and do not include cases treated by private physicians. In some provinces, small numbers of cases treated by private physicians are included. The statistics from some of the provinces have omissions, sometimes of several years. After a careful analysis of this material, it is not possible to state whether the incidence of venereal disease in Canada has increased, decreased, or remained stationary during the last twenty years. It is not even possible to state whether there was a change in the incidence of venereal diseases in Canada during World War II.

During 1944, 21,033 cases of gonorrhoea and 15,911 cases of syphilis were reported by the provincial health departments to the Dominion Bureau of Statistics. The ratio of gonorrhoea to total syphilis was, therefore, 1.3 to 1. The experience of the three Armed Forces in Canada from 1940-44 reveals that the ratio of gonorrhoea to total syphilis in Canada for that period was approximately 6 to 1. We know definitely that 15,911 cases of syphilis came to attention. Assuming that the ratio of gonorrhoea to syphilis should be 6 to 1, it is estimated that, during the year 1944, there must have been at least 90,000 cases of gonorrhoea in Canada, of which only 21,033 were reported by physicians. It is apparent, therefore, that the reporting of gonorrhoea by physicians in Canada is very inadequate. There are reasons to suspect that syphilis also

was not reported completely. In the Province of Manitoba, the ratio of gonorrhoea to syphilis for 1944 was 2.6 to 1.

It is not enough to have legislation making the notification of venereal disease compulsory and to have the machinery for collecting venereal disease statistics. Today, by virtue of recent amendments to provincial venereal disease control acts, the notification of venereal disease is compulsory throughout Canada. The machinery for the collection of statistics on venereal disease is in existence. In spite of this, the statistics on the incidents of venereal disease in the civilian population of Canada are incomplete.

One of the most important tasks of the directors of all the provincial venereal disease control divisions will be to devise methods of stimulating better reporting by physicians. This can be done in a number of ways, on a co-operative basis. But experience shows that there will be many physicians who will not co-operate. The director of the division of V.D. control might wish to recommend that physicians who fail to report their venereal disease cases, in spite of all attempts to enlist their co-operation, are dealt with according to the Venereal Disease Control Act.

It is essential that there be a marked improvement in the reporting of venereal diseases by physicians.

Third Requirement: Adequate Facilities for the Diagnosis and Treatment of V.D.

This is the phase of venereal disease control work which has received most attention in Canada in the past. In fact, until a few years ago, some provinces seemed to believe that the provision of diagnosis and treatment facilities for venereal disease was almost the only function of a venereal disease control division. The treatment aspect of venereal disease control is important, of course, but only as one phase of the entire venereal disease control programme.

The province should offer good laboratory facilities for the diagnosis of venereal diseases. There should be a sufficient number of clinics to render treatment services to the whole population. My information is that, in the City of Winnipeg, there are very good venereal disease clinics. I have no information as to whether or not there are adequate clinical facilities for the treatment of venereal disease in other parts of the Province. In sparsely-populated areas of the Province, where there are no clinics, the referral of physicians for the diagnosis and treatment of indigent venereal disease patients should be done by the Division of Venereal Disease Control. The Division should also offer a professional consultative service to all the physicians of the Province on the management of venereal disease.

The question of setting up rapid treatment centres for venereal disease has been discussed by previous speakers. This is not an absolute necessity. Many forms of rapid treatment are still in the experimental stage. Some types of rapid treatment for syphilis involve a certain risk of mortality from treatment. The forms of rapid treatment for syphilis where penicillin is used are safe, but they are still in the experimental stage. Having rapid treatment centres would certainly be a step forward. If the Province of Manitoba feels that it wants to take a progressive step, it could set up one rapid treatment centre for the City of Winnipeg. But this is a fairly expensive proposition and, at this stage, the money could be much more advantageously employed in the development of the other phases of the venereal control programme. When all the phases of the programme have been developed to a greater extent, then it would be time for thinking of setting up rapid treatment centres. I understand that larger cities, such as Montreal and Toronto, are now in the process of setting up a certain number of rapid treatment centres. I would not recommend such action in Manitoba at the present time.

Fourth Requirement: Adequate Epidemiological Service.

There should be provision for the collection of information on contacts to cases of venereal infections, for the investigation of these contacts and for the compulsory treatment of those who are found to be infected with a venereal infection in a communicable form.

This epidemiology should be done by properly-trained social workers, who need not be nurses. It would be advisable to have one or two mature social workers, or a male social worker, to investigate those contacts who can only be found in certain types of premises, such as questionable rooming houses, night clubs, taverns, and the like. Since those who acquire venereal disease have methods of finding the contacts who infect them, social workers should also be able to find the same contacts and bring them in for medical examination.

Fifth Requirement: Provision for Dealing with Community Conditions which Facilitate the Spread of Venereal Infection.

This can be done by legislation and supervision. There should be appropriate legislation to deal with the most common offenders, such as certain rooming houses, hotels, restaurants, dance halls, night clubs, etc. Licenses for the operation of such establishments are granted either at the provincial, or at the municipal level. But the granting of licenses is not sufficient. There should also be adequate supervision of the establishments.

Frequently, it happens that the license-issuing authority, usually the provincial Department of Revenue, is concerned only with the issuing of licenses. If an applicant is a bona fide resident, has the type of premise for which he is seeking a license, and pays the license fee, he obtains a license. The licensing body is not concerned very much about the way the establishment has been, or will be, operated. The supervision of the establishments is usually done by virtue of a municipal by-law on housing. The inspectors are often concerned only with the physical set-up of the building, that is to say, providing there is an adequate number of windows, adequate plumbing system, adequate sewage disposal and so forth. The management of the establishment keeps the license. The inspectors often are not concerned about the way the establishments are operated. Often, no one else assumes, or has, this responsibility. Frequently, the city will claim that this is a provincial matter and the province will claim that it is a municipal matter, with the result that little or nothing is done in the way of proper supervision.

It is very important that the authority for the granting of licenses and for the supervision of premises be clearly defined, and that the opportunity for evading this responsibility, or for referring from province to city, and back again, be eliminated.

Apart from the supervision of premises, provision should be made for the management of an establishment to be notified each time his establishment has been named as associated with the acquisition of venereal disease. It is not uncommon for the manager of an establishment, when he is approached about this, to say that he has never been informed. Steps should be taken to ensure that he is always informed. Preferably, he should be informed in writing.

In addition to this, there must also be provision for some sort of penalty for those managements that have been informed a certain number of times. One penalty could be the cancellation of license. Another penalty could be the periodic publication, in newspapers, of lists of premises frequently associated with the acquisition of venereal disease. Another penalty could be in the form of placarding. There is in existence a system whereby houses are placarded when cases of communicable diseases have been diagnosed in them. Venereal diseases could possibly be added to the list of communicable diseases subject to the by-law on placarding. Possibly, the mere existence of a conspicuous venereal disease placard, to be used as a threat to non-co-operative managements and owners, would accomplish the desired effect.

Sixth Requirement: Provision for Adequate Case-Finding.

For both gonorrhoea and syphilis, the most important method of case-finding is through an adequate epidemiological service, as mentioned under the fourth requirement. Case-finding of syphilis can also be done through routine blood testing of special groups.

A very good case-finding method is that of performing a blood test for syphilis on all hospital admissions. At the present time, large hospitals and most university hospitals have local regulations whereby a blood test for syphilis is done on all admissions. Unfortunately, in many of these hospitals, a blood test for syphilis is done only on public ward patients. Blood testing for syphilis on all hospital admissions, public and private, should be made compulsory by provincial legislation. I am not aware that any such provincial legislation is in existence at the present time. Manitoba has, in this respect, the opportunity of leading the way for the other provinces in this field. This would be a way of improving the type of medical service rendered by physicians to the patients of this province. It is admitted that a blood test for syphilis should be done always as part of a complete medical examination. If there were legislation making a blood test for syphilis compulsory for all hospital admissions, this would mean that all hospital patients in the province would benefit from this sound medical practice and good public health procedure.

Another case-finding method is that of a compulsory premarital blood test. The Provinces of British Columbia, Saskatchewan and Alberta have already passed legislation making the premarital blood test for syphilis compulsory. This legislation has not yet been put into effect in British Columbia, but it is expected that it will be in the near future. Of all the possible methods of case-finding for syphilis through mass blood tests, the premarital blood test is probably the best. It is easy to carry out administratively and it reaches a very large proportion of the population at an important time in their lives. Most people get married. It is known that the curve showing the age group at which people marry is very similar to the curve showing the age group at which people contract venereal disease. In other words, the age group is the same in both cases. It is reasonable to believe that, in the large majority of instances, the date of marriage possibly coincides with the end of the period of sexual promiscuity, if there were such a period in an individual. A blood test before marriage is a protection for the prospective marital partner, and is also a protection for the children of the marriage.

It is not felt that legislation on prenatal blood test should be introduced at this time. The premarital blood test is so much more important, and easier to apply than the prenatal blood test. Legislation on prenatal blood testing is not easy to enforce, since many mothers do not seek medical attention until the time of delivery. The purpose of the prenatal blood test, protection of children to be born, can be achieved in part by the premarital blood test. After the premarital blood test legislation will have been in effect for a period of years, the necessity for legislation on the prenatal blood test will diminish. Also, since today most deliveries are done in hospitals, prenatal examination can be covered indirectly by the method of having compulsory blood tests on all hospital admissions.

Seventh Requirement: Adequate Venereal Disease Education.

There are three principal groups of people who should be reached by venereal disease education. First and foremost, the medical profession. Some Canadian medical schools do not provide sufficient training in the field of venereal disease control. Methods should be devised to remedy this long-standing need. The second group of people who should receive venereal disease education is the public health officials and community leaders. They are the ones who are in a position to effectively support all the public health measures that will be needed in order to have a good venereal disease control programme. The third group of people who must be given venereal disease education is the general public. In the last analysis, it will be the general public who will demand adequate public health measures in venereal disease control, and there is everything to gain by their proper education in this respect. Also, education of the public should produce a diminution of exposures to venereal infections. The question of venereal disease education in the schools has already been covered by previous speakers. It is part of the education of the general public at a very important time.

Summary

There are seven requirements for a good provincial venereal disease control programme, which are as follows:

1. Adequate professional medical personnel, both in number and quality.
2. Provision for the compulsory notification of all venereal infections in a communicable form.
3. Adequate facilities for the diagnosis and treatment of venereal disease.
4. Adequate epidemiological service.
5. Provision for dealing with community conditions which facilitate the spread of venereal infection.
6. Provision for adequate case-finding.
7. Provision for the dissemination of adequate venereal disease education.

College of Physicians and Surgeons of Manitoba

Registration Committee

Winnipeg, Man., May 31st, 1945.

A meeting of the Registration Committee was held May 31st, 1945.

Present: Drs. Wm. Turnbull and W. G. Campbell.

The purpose of the meeting was to consider the application for registration of Dr. John Garfield Trimble, a graduate from Edinburgh University, 1945, and registered with the General Medical Council of Great Britain, January, 1945.

Motion:

Moved by Dr. Wm. Turnbull, Seconded by Dr. W. G. Campbell: "THAT a license be granted to Dr. John Garfield Trimble." Carried.

Registration Committee

Winnipeg, Man., June 14th, 1945.

A meeting of the Registration Committee was held June 14th, 1945.

Present: Drs. Wm. Turnbull and W. G. Campbell.

The purpose of the meeting was to consider the application for registration of Dr. Jutta Brokovski. (Her maiden name was Jutta Levinschn.)

Dr. Jutta Levinschn took her medical course at a school in Wales. The following credentials were presented:

1. External student, 1st examination, Faculty of Medicine, University of London, October, 1936.

2. External student, 2nd examination, Faculty of Medicine, University of London, October, 1938.

Jutta Levinschn subsequently married Dr. Theodore Brokovski, and she took the conjoined examinations with the Royal College of Surgeons of England, and the Royal College of Physicians of England, both in 1941. Under the name of Dr. Jutta Brokovski, she is registered with the General Medical Council of Great Britain under date of July 17, 1941.

Motion:

Moved by Dr. Wm. Turnbull, Seconded by Dr. W. G. Campbell: "THAT a license be granted to Dr. Jutta Brokovski." Carried.

Registration Committee

Winnipeg, Man., June 29th, 1945.

A meeting of the Registration Committee was held on Friday, June 29, 1945.

The purpose of the meeting was to consider the application for registration of Dr. Stephen L. Drulak, Capt., R.C.A.M.C. Dr. Drulak took his premedical training at the University of Manitoba. He attended McGill University and graduated from that institution in 1943. He took his Medical

Council of Canada examination and was registered with that body on September 18, 1944.

Motion:

Moved by Dr. Wm. Turnbull, Seconded by Dr. T. Digby Wheeler: "THAT Dr. Stephen L. Drulak be accepted for registration with the College of Physicians and Surgeons of Manitoba." Carried.

Registration Committee

Winnipeg, Man., July 9th, 1945.

A meeting of the Registration Committee was held Monday, July 9, 1945.

Present: Drs. Wm. Turnbull, T. Digby Wheeler, and W. G. Campbell.

1. Re Captain A. S. Tauber.

The Committee considered the case of a practice being carried on by Captain A. S. Tauber, Churchill, Manitoba. Captain Tauber was seconded by the Royal Canadian Army Medical Corps for employment with the National Harbours Board, and is carrying on a civilian general practice at that center.

In a letter from the Registrar, dated June 27th, 1945, it was outlined very distinctly to Captain Tauber how he could become registered under the War Time Amendment to the Medical Act.

Captain Tauber is a licentiate of the Medical Council of Canada, and is registered in the Province of Ontario under date of July 5th, 1945.

A letter was received from the Executive Secretary of the National Harbours Board requesting that Captain Tauber be granted a temporary license. It was explained to the National Harbours Board how Captain Tauber could become licensed, and a copy of the letter forwarded to Captain Tauber was also forwarded to the National Harbours Board.

The Committee agreed with what action had already been taken, and were quite anxious to grant Captain Tauber a license under the War Time Amendment, if and when he would carry out the instructions given.

2. Consideration of an Application for Registration from Dr. Henri Schaffer.

Dr. Schaffer has been employed by the Provincial Department of Health as a junior physician at the Manitoba School for Mental Defectives at Portage la Prairie, Manitoba, since October 13th, 1943.

Dr. Schaffer in submitting his credentials supplied a diploma received from Naples, Italy, under date of 21st of April, 1934, also a certificate from the Royal University of Naples, a diploma of state examination from the Royal University of Rome, and a certificate of registration in the Italian Medical Register of the Province of Milan.

He was also asked for, and supplied, an affidavit of identification, and an unmounted photograph, as well as a certificate from Dr. M. E. Bristow, Acting Medical Superintendent, of the Manitoba School for Mental Defectives.

The Committee considered that this application should go before the Council for consideration.

3. Re Application from Dr. Nicholas Farkas.

An application for registration was received from Dr. Nicholas Farkas.

At the present time he is engaged in practice at Pilot Mound, Manitoba, by request, and under the protection, of the Provincial Health Department.

Dr. Farkas submitted his diploma from Rome under date of the 21st of April, 1931, as well as two other papers from Italian sources, and an affidavit of identification.

The Committee considered that this application should go before the Council for consideration.

Opinions:

The Committee is of the opinion that:

(1) The Medical Council of Canada should adopt a policy in reference to these foreign applications, as there is no means by which any Provincial Medical Board can evaluate the credentials submitted on application for registration.

(2) That the Council of the College of Physicians and Surgeons of Manitoba should formulate, along with the policy that should be submitted by the Medical Council of Canada, rules and guidance under which the Registration Committee could satisfactorily pass on each application.

Adjournment:

The meeting then adjourned.

Registration Committee

Winnipeg, Man., July 12th, 1945.

A meeting of the Registration Committee was held on Thursday, July 12th, 1945.

Re Squadron Leader F. P. McInnis

The purpose of the meeting was to consider an application for registration under the War Time Amendment to the Medical Act from Squadron Leader F. P. McInnis.

Dr. McInnis has been associated, in part time work in Gynecology, with the Winnipeg Clinic, and is anxious to become registered under the amendment to the Medical Act to carry on the Gynecology work for the clinic while Dr. Best is on holidays.

Dr. McInnis is a licentiate of the Province of Ontario. His credentials are quite in order for registration under the War Time Amendment.

The Committee is of the opinion that the War Time Amendment was passed for the sole purpose of relieving medical shortage around air port areas

where civilian doctors were not easily obtainable, and to fill vacancies in rural areas where no medical practitioner was available.

The Committee did not consider Dr. McInnis should be eligible for registration to practice in the City of Winnipeg under the above circumstances, as Winnipeg had ample supply of Gynecologists as well as all other specialists.

The Committee gave instructions to the Registrar to communicate with the Honorable Mr. Ivan Schultz, Minister of Health, Winnipeg, pointing out the facts as stated above.

Registration Committee

Winnipeg, Man., July 24th, 1945.

A meeting of the Registration Committee was held Tuesday, July 24th, 1945.

Present: Drs. W. G. Campbell and Wm. Turnbull.

The purpose of the meeting was to consider the application for registration of Capt. A. S. Tauber, Churchill, Manitoba, under the War Time Amendment of the Manitoba Medical Act.

A great deal of correspondence had been carried on in reference to this case, but at no time had any reply been received from Capt. Tauber. Eventually the Minister of Health was agreeable that Capt. Tauber should become registered, and this was done, the certificate being forwarded on this date to Churchill, Manitoba.

Motion:

Moved by Dr. Wm. Turnbull, Seconded by Dr. W. G. Campbell: "THAT this registration be carried out as above." Carried.

Registration Committee

Winnipeg, Man., Sept. 4th, 1945.

A meeting of the Registration Committee was held Tuesday, September 4th, 1945.

Present: Drs. T. Digby Wheeler, and W. G. Campbell.

The purpose of the meeting was to consider the application for registration of Dr. Gerard Joseph Edward Letienne.

Dr. Letienne presented the following credentials:

1. A B.A. degree from St. Boniface College, 1938.
2. A diploma in medicine from Laval University, 1945.
3. A registration certificate from the Medical Council of Canada, 1945.

Motion:

Moved by Dr. T. Digby Wheeler, Seconded by Dr. W. G. Campbell: "THAT Dr. Gerard Joseph Edward Letienne be granted a license to practice in the Province of Manitoba." Carried.

Gordon Bell Memorial

Winnipeg, Man., Sept. 21st, 1945.

A meeting of the Trustees of the Gordon Bell Fellowship was held on Friday, September 21st, 1945.

Present: Drs. J. S. McInnes, W. G. Campbell and Wm. Turnbull.

The purpose of the meeting was to consider the resignation of Dr. H. V. Rice.

Motion:

Moved by Dr. Wm. Turnbull, Seconded by Dr. J. S. McInnes: "THAT the resignation of Dr. H. V. Rice be accepted, and that the returned cheques covering the amount of Four Hundred and Fifty Dollars (\$450.00) be sent to Dr. T. Digby Wheeler, Treasurer of the College of Physicians and Surgeons of Manitoba, for cancellation." Carried.

The Committee were unanimous in opinion that if Dr. Rice, at a future date, wished to apply for the Gordon Bell Fellowship, his application would be given due consideration, owing to the fact that his resignation was submitted because he was unable to carry on his research work.

Registration Committee

Winnipeg, Man., Sept. 21st, 1945.

A meeting of the Registration Committee was held Friday, September 21st, 1945.

Present: Drs. T. Digby Wheeler, Wm. Turnbull and W. G. Campbell.

1. Consideration of an Application for an Enabling Certificate from Dr. Kurt Anstreicher, Graduate from Vienna.

According to the recommendations of the Registration Committee, April 14, 1943, Dr. Anstreicher has taken the full course of lectures of the fourth year at the Manitoba Medical College, and has written the examinations set for that year. Dr. A. T. Mathers advised the College of the marks obtained by Dr. Anstreicher.

Motion:

Moved by Dr. T. Digby Wheeler, Seconded by Dr. Wm. Turnbull: "THAT since Dr. Kurt Anstreicher has complied with the instructions of the Registration Committee, on passing the fourth year examinations of the University of Manitoba Medical College, he be granted an enabling certificate to write the examinations of the Medical Council of Canada." Carried.

The Registrar and Chairman of this Committee, Dr. W. G. Campbell, has asked the Council on several occasions to establish regulations and standards for the guidance of the Registration Committee in its deliberations on applications from graduates of European Medical Colleges. At this meeting Dr. Digby Wheeler stated that the College should have a definite rule regarding

foreign physicians registering in the Province of Manitoba.

Motion:

Moved by Dr. T. Digby Wheeler, Seconded by Dr. Wm. Turnbull:

"That the Registration Committee submit the following resolution to the College of Physicians and Surgeons of Manitoba at their annual meeting on October 17th, 1945:

"WHEREAS the College of Physicians and Surgeons of Manitoba is receiving a number of applications for enabling certificates and licenses, from graduates of continental colleges;

"AND WHEREAS it is now felt by this Council that the sphere of greatest usefulness for these men is in the countries from which they originally came; it is therefore resolved:

"THAT their applications for licenses and enabling certificates in the Province of Manitoba be not considered."

The following exception is made to the above resolution:

"WHEREAS there have been employed for a period of time by the Manitoba Government, graduates of various continental universities, and these men are now applying for enabling certificates and licenses in Manitoba, it is resolved:

"THAT they be asked to attend the Medical College for one year (fourth), and to pass fourth year examinations as laid down by the University of Manitoba. If this is complied with, then an enabling certificate may be granted to these men." Carried.

2. Consideration of an Application for an Enabling Certificate from Dr. Joseph Kellner.

Dr. Kellner's credentials were presented to the Committee. He is a graduate from Naples University.

Motion:

Moved by Dr. T. Digby Wheeler, Seconded by Dr. Wm. Turnbull: "THAT as Dr. Joseph Kellner has been employed by the Manitoba Government as physician in the Mental Hospital at Portage la Prairie, that he be asked to attend the Medical College for one year, and to write the fourth year examinations. If he is successful, this College may then grant him an enabling certificate to write the examination of the Medical Council of Canada." Carried.

3. Consideration of an Application for a License to Practice in the Province of Manitoba from Dr. Groszman Tibor.

Dr. Tibor's credentials were presented to the Committee. He is a graduate from the University of Bologna, Italy, 1944.

Motion:

Moved by Dr. T. Digby Wheeler, Seconded by Dr. Wm. Turnbull: "THAT as Dr. Groszman Tibor

has been employed by the Manitoba Government as physician in the Mental Hospital at Selkirk, that he be asked to attend the Medical College for one year, and to write the fourth year examinations. If he is successful, this College may then grant him an enabling certificate to write the examination of the Medical Council of Canada." Carried.

4. Re Disposition of Temporary Licenses issued to the United States Army Officers on March 13, 1945, under the Amendment to the Medical Act.

The Registrar recently communicated with the Officer Commanding of the United States Army Forces in Central Canada, re the present location of these medical officers. A very courteous reply stated that Capt. H. S. Johnson and M. D. Buskirk had left Canada on August 2, 1945; and that Capt. Werner Lehmann will leave Canada on October 1, 1945, for reassignment in the United States.

Motion:

Moved by Dr. T. Digby Wheeler, Seconded by Dr. Wm. Turnbull: "THAT the temporary licenses issued to Capt. H. S. Johnson and Capt. M. D. Buskirk be terminated under date of August 2, 1945, on their reassignment to duty in the United States; and that the temporary license issued to Capt. Werner Lehmann be terminated under date of October 1, 1945, on his reassignment to duty in the United States." Carried.

Registration Committee

Winnipeg, Man., October 12th, 1945.

A meeting of the Registration Committee was held Friday, October 12th, 1945.

Present: Drs. T. Digby Wheeler, Wm. Turnbull and W. G. Campbell.

1. Consideration of an Application for Registration from Dr. Emmanuel Denis Varverikos.

Dr. Varverikos is a graduate from Laval University, 1944, and is registered with the Medical Council of Canada under date of September 18th, 1944.

Motion:

Moved by Dr. T. Digby Wheeler, Seconded by Dr. Wm. Turnbull: "THAT Dr. Emmanuel Denis Varverikos' application for registration be accepted, and that he be enrolled on the register on the payment of the necessary fee." Carried.

2. Consideration of an Application for Registration from Dr. John Carlton MacMaster.

Dr. MacMaster is a graduate from the University of Glasgow, 1928, has been duly registered with the General Medical Council of Great Britain, 1928, and is in good standing.

Motion:

Moved by Dr. T. Digby Wheeler, Seconded by Dr. Wm. Turnbull: "That the application for registration of Dr. John Carlton MacMaster be accepted, and that he be enrolled on the register on payment of the necessary fee." Carried.

3. Consideration of a Letter from Dr. E. L. Ross, Ninette, Manitoba, re Registration of Dr. R. E. Anderson.

A letter was received from Dr. E. L. Ross, Medical Director, of the Ninette Sanatorium, regarding Dr. R. E. Anderson, requesting permission to enroll him on the staff of the Sanatorium at Ninette. Dr. Anderson had consulted the Registrar during the recent summer, and was advised that he would be eligible to either write the examinations of the University of Manitoba, Medical College, or could obtain an enabling certificate to write the examination of the Medical Council of Canada, and thereby become registered.

Motion:

Moved by Dr. Wm. Turnbull, Seconded by Dr. T. Digby Wheeler: "THAT the registrar be instructed to communicate with Dr. E. L. Ross stating that under the present circumstances, Dr. R. E. Anderson might be employed on the staff of the Sanatorium, but that if and when a duly registered physician or a graduate from Manitoba Medical College who might be discharged from the army, should desire a position on the staff of the Sanatorium, that such an appointment should supersede that of Dr. Anderson. The Committee emphasized the Policy of the Council of the College of Physicians and Surgeons, that any member appointed on staff of any institution in Manitoba should be duly registered as a licensed practitioner in the Province of Manitoba." Carried.

"Courage and Devotion Beyond the Call of Duty"

Through the co-operation of Mead Johnson & Company, \$34,000 in War Bonds are being offered to physician-artists (both in civilian and in military service) for art works best illustrating the above title.

This contest is open to members of the American Physicians' Art Association. For full details write Dr. F. H. Redewill, Secretary, Flood Building, San Francisco, Cal.

* * *

A person's age is not dependent upon the number of years that have passed over his head but upon the number of colds that have passed through it.—Woods Hutchinson.

Doctors Returned to Civilian Practice
From Armed Forces

The following doctors have been discharged from the services and are now back in practice. Their office addresses and telephone numbers are given so that you may easily inform their old patients where they may be found:

Name	Address	Telephone No.
Adamson, Dr. Gilbert L.	Winnipeg Clinic, Winnipeg	97 284
Adamson, Dr. J. D.	Winnipeg General Hospital	87 681
Anderson, Dr. Julius	185 Maryland St., Winnipeg	404 065
Austman, Dr. K. J.	704 McArthur Bldg., Winnipeg	95 826
Barrie, Dr. J. G.	11 Rosewarne Ave., St. Vital	204 643
Bell, Dr. P. G.	Deer Lodge Hospital, Winnipeg	62 821
Berger, Dr. M.	428 Anderson Ave., Winnipeg	
Bleeks, Dr. Cherry K.	105 Medical Arts Bldg., Wpg.	93 273
Boyd, Dr. Wm. J.	1012 Ingersoll St., Winnipeg	24 427
Brown, Dr. M. M.	508 Medical Arts Bldg., Winnipeg	93 889
Bruce, Dr. J. D.	20 Buckingham Apts., Winnipeg	96 780
Burch, Dr. J. E.	Winnipeg Clinic, Winnipeg	97 284
Cadham, Dr. R. G.	City Hall, Winnipeg	849 122
Carleton, Dr. M.	603 Boyd Bldg., Winnipeg	94 763
Clark, Dr. C. W.	216 Medical Arts Bldg., Winnipeg	94 354
Cohen, Dr. R.	600 Boyd Bldg., Winnipeg	93 275
Coke, Dr. R.	Royal Alexandra Hotel, Winnipeg	92 141
Cooper, Dr. Ross H.	212 Medical Arts Bldg., Winnipeg	93 103
Corrigan, Dr. C. E.	307 Waterloo St., Winnipeg	401 271
Cram, Dr. J. B.	409 Power Bldg., Winnipeg	95 165
Croll, Dr. L. D.	661 Broadway, Winnipeg	72 138
Davidson, Dr. Kenneth	6 Medical Arts Bldg., Wpg.	95 683
Davidson, Dr. A. M.	6 Medical Arts Bldg., Winnipeg	95 683
Downey, Dr. J. L.	333 Bartlett Ave., Winnipeg	46 751
Easton, Dr. S.	216-7 Curry Bldg., Winnipeg	26 477
Elliott, Dr. M. R.	141 Ferndale Ave., Norwood	
Elvin, Dr. Norman L.	314 Medical Arts Bldg., Wpg.	95 317
Fahmi, Dr. Gordon S.	105 Medical Arts Bldg., Wpg.	93 273
Fairfield, Dr. G. C.	Portage la Prairie, Man.	
Flett, Dr. R. O.	203 Medical Arts Bldg., Winnipeg	92 934
Gyde, Dr. M. C.	St. Pierre, Man.	
Hall, Dr. C. W.	1328 Pembina Highway, Fort Garry, Man.	49 498
Hamilton, Dr. Glen F.	408 Medical Arts Bldg., Wpg.	93 846
Hart, Dr. W. J.	Deer Lodge Hospital, Winnipeg	62 821
Hastings, Dr. D. J.	634 Somerset Bldg., Winnipeg	98 727
Helgason, Dr. R. E.	Glenboro, Man.	
Henneberg, Dr. C. C.	302 Medical Arts Bldg., Wpg.	92 710
Hillsman, Dr. J. A.	308 Medical Arts Bldg., Winnipeg	97 329
Hitesman, Dr. R. J.	512 Medical Arts Bldg., Wpg.	94 808
Holland, Dr. T. E.	203 Medical Arts Bldg., Winnipeg	96 948
Hudson, Dr. J. E.	Hamiota, Man.	
Jacks, Dr. Q. D.	410 Medical Arts Bldg., Winnipeg	95 309
Jauvoish, Dr. S.	206 Boyd Bldg., Winnipeg	93 240
Kilgour, Dr. J. M.	Winnipeg Clinic, Winnipeg	97 284
Klass, Dr. A. A.	132 Matheson Ave., Winnipeg	55 022
Kobrinisky, Dr. Sydney	505 Boyd Bldg., Winnipeg	93 912
Lansdown, Dr. L. P.	Pine Falls, Man.	
Lebbetter, Dr. T. A.	Winnipeg Clinic, Winnipeg	97 284
Lotimer, Dr. L. E.	Winnipeg Clinic, Winnipeg	97 284
Lund, Dr. P. C.	Deer Lodge Hospital, Winnipeg	62 821
Lyons, Dr. R.	420 Niagara St., Winnipeg	404 009
MacDonnel, Dr. J. A. K. (lady)	Winnipeg Clinic	97 284
MacKinnon, Dr. W. B.	661 Broadway, Winnipeg	72 138
MacLeod, Dr. J. W.	Winnipeg Clinic, Winnipeg	97 284
MacNeil, Dr. Robt. W.	Children's Hospital, Winnipeg	37 271
Malkin, Dr. S.	701 Boyd Bldg., Winnipeg	97 223
Mathewson, Dr. F. A. L.	308 Med. Arts Bldg., Wpg.	94 942
McFarlane, Dr. R. H.	Internes' Quarters, General Hospital, Winnipeg	87 681
McIntyre, Dr. Donald N. C.	303 Med. Arts Bldg., Wpg.	92 639
McKenty, Dr. J. Stewart	514 Med. Arts Bldg., Wpg.	92 711

McKenty, Dr. V. J.	205 Boyd Bldg., Winnipeg	94 112
McLandress, Dr. Murray	Apt. "D" Brentwood Lodge, Winnipeg	42 490
McNicol, Dr. H. L.	Deer Lodge Hospital, Winnipeg	62 821
MacNeil, Dr. Robt. W.	Children's Hospital, Wpg.	57 031
Medovy, Dr. Harry	401 Boyd Bldg., Winnipeg	93 849
Mitchell, Dr. J. R.	Ste. 10 Fairhaven Apts., Winnipeg	72 187
Myers, Dr. R. F. M.	15 Clement Block, Brandon, Man.	
Neilson, Dr. Clive	404 Medical Arts Bldg., Winnipeg	94 041
Perrin, Dr. M. B.	Winnipeg Clinic, Winnipeg	97 284
Pierce, Dr. M. M.	354 Stella Ave., Winnipeg	54 134
Ramsay, Dr. F. G.	378 Borebank St., Winnipeg	402 669
Revell, Dr. D. G.	Winnipeg General Hospital, Wpg.	87 681
Richardson, Dr. R. W.	105 Medical Arts Bldg., Wpg.	93 273
Ridge, Dr. J. M.	Clearwater Indian Hospital, The Pas, Man.	
Riley, Dr. H. W.	Winnipeg Clinic, Winnipeg	97 284
Rose, Dr. J. E.	Winnipeg Gen. Hosp., Winnipeg	87 681
Rosenfield, Dr. V. L.	405 Avenue Bldg., Winnipeg	97 141
Rumball, Dr. A. C.	Deer Lodge Hospital, Winnipeg	62 821
Rusen, Dr. S. D.	399 Machray Ave., Winnipeg	58 474
Schoemperlen, Dr. C. B.	216 Medical Arts Bldg., Wpg.	94 354
Smith, Dr. F. Hartley	86 Tache Ave., Norwood, Man.	203 993
Sommerville, Dr. A. N.	614 St. Mary's Rd., St. Vital	202 411
Sommerville, Dr. A. N.	614 St. Mary's Rd., St. Vital	
Stephens, Dr. Gordon M.	635 Henderson Hy., Wpg.	503 965
Stephenson, Dr. Earl	409 Power Bldg., Winnipeg	95 165
Swartz, Dr. David	303 Medical Arts Bldg., Winnipeg	92 639
Swan, Dr. R. S.	215 Medical Arts Bldg., Winnipeg	94 354
Tanner, Dr. A. R.	310 Medical Arts Bldg., Winnipeg	95 946
Taylor, Dr. C. H.	606 Boyd Bldg., Winnipeg	98 937
Tisdale, Dr. Paul K.	Deer Lodge Hospital, Winnipeg	62 821
Walton, Dr. C. H. A.	Winnipeg Clinic, Winnipeg	97 284
Walton, Dr. Fred A.	3 Locarno Apts., Winnipeg	45 719
Whelpley, Dr. E. H.	586 Ingersoll St., Winnipeg	39 061
Brook, Dr. Joseph	Beausejour, Man.	
Bissett, Dr. E. D. R.	Pine Falls, Man.	
Brownlee, Dr. T. I.	Russell, Man.	
Crawford, Dr. C. S.	The Pas, Man.	
Davidson, Dr. D. A.	Cartwright, Man.	
Jacobs, Dr. A. L.	The Pas, Man.	
Varverikos, Dr. E. D.	Selkirk, Man.	

Outmoded Surgical Instruments Wanted for
Greek Red Cross

An urgent appeal is made by the National Secretary of the Greek War Relief Fund, on behalf of the Greek Red Cross, to hospitals and doctors throughout Canada, for outmoded surgical instruments and hospital supplies which they might have and are no longer being used by them.

These instruments and supplies will be a great help to the doctors in hospitals throughout Greece, which were systematically looted by the retiring enemy.

Donations to this worthy cause by members of the medical profession in Canada, are to be sent express collect to:

The Greek War Relief Fund,
245 Notre Dame Street, West,
Montreal, Que.

Each package should be accompanied by a statement indicating the articles which are enclosed.

PHYSIOTHERAPY

by J. C. Swann

Member of

THE CANADIAN PHYSIOTHERAPY ASSOCIATION

(Incorporated by Dominion Charter)

Graduate of: Massage, Swedish Movements, Muscle Re-education and Medical Gymnast, 2 years training in Christie Street Hospital, Toronto, Masseur at Deer Lodge Hospital, Pensions and Health, Winnipeg, for the past 15 years.

(Under Medical Supervision or Direction)

Phone 98 912

438 Somerset Bldg.

Res. Phone

after 1 p.m.

Winnipeg, Man.

54 195

DOCTORS' and NURSES' DIRECTORY

213 Balmoral Street, Winnipeg, Man.

24-Hour Service

Phones:

Doctors' — **72 152**

Nurses' — **72 151**

Registered Nurses.

Practical Nurses.

Victorian Order of

Nurses—night calls,

Sundays and

holidays.

Phone **72 008**

Physiotherapists and Masseuses

—P. BROWNELL, Reg. N., Registrar.

Winnipeg Drug Co. Ltd.

Complete Stock of

**Drugs and Dispensing
Specialties**

always on hand

and . . . Your Prescriptions
are Compounded
by Graduate
Pharmacists

New Dispensing Phone No.

96 478

381 PORTAGE AVE. (at Edmonton)

« COLLECTIONS »

The MEDICAL BUSINESS BUREAU can render you an experienced collection service—with 19 years' service to the Medical and Dental professions.

We have every facility for an efficient collection service—

Investigations on character and financial worth;

Personal contact with doctors;

Follow-ups;

Complete legal facilities;

Bonded agents throughout Canada;

Regular monthly returns.

Doctor, you require a tactful and dignified service that will not jeopardize your position with the patient. Write or telephone—

MEDICAL BUSINESS BUREAU

211 Power Bldg.

Telephone 95 001

WINNIPEG

Its food value is greater
than many "Food Products"

**DREWRY'S DRY
GINGER ALE**

3 Sizes; 6-oz — 12-oz. — 28-oz.

The Roscoe Company

Printers of

The Manitoba Medical Review

352 Cumberland Ave.

Phone 24 521

● **CORYPHEDRINE**

● **SONERYL**

● **MYOCHRYLINE**

● **STOVAGINAL**

ARE A FEW OF THE
MEDICAL SPECIALTIES
MANUFACTURED BY

POULENC FRERES

204 YOUNVILLE SQUARE

MONTREAL

Detailed literature upon request